

Bloomberg Businessweek

BIG IDEA

FUNDING

HYPE

**UNICORN
MANIA**

SETBACK

BACKLASH

EXPLOSION

**Theranos CEO
Elizabeth Holmes
fights back**

p44

YOU CAN'T BUILD THE BUSINESS OF TOMORROW ON THE NETWORK OF YESTERDAY.

It's no secret: business has changed—in every way, for every business. Modern technologies have brought new opportunities and new challenges, like BYOD and a mobile workforce, that old networks just weren't built for. While demand on these networks has increased exponentially, networking costs have skyrocketed and IT budgets haven't kept pace.

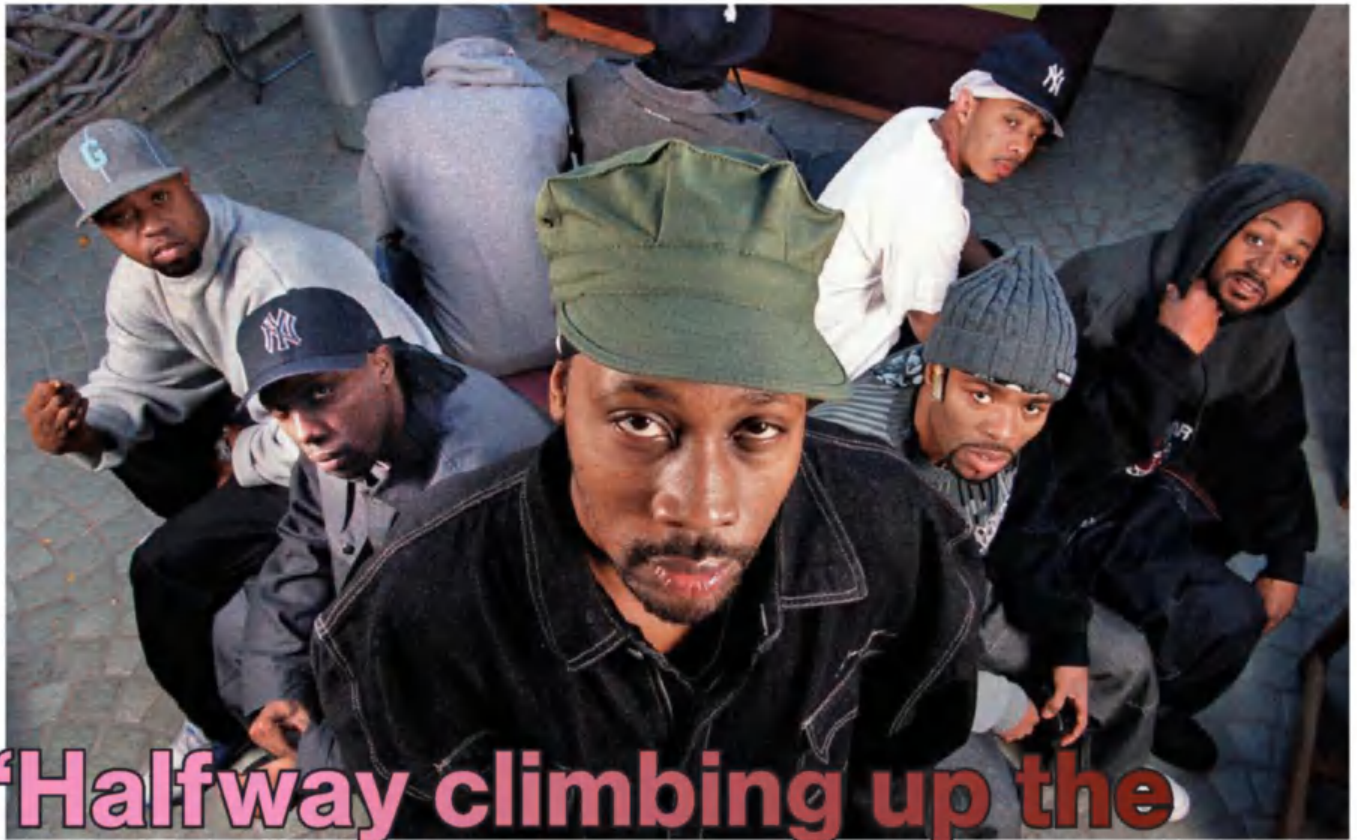
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**“Halfway climbing up the
pyramids of Cheops,
I said to RZA that one day
we would do something
special together that would
last throughout the ages”**

p56

**“It does make you
wonder how they’re
handling their food
safety as a whole”**

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**“Patent first,
ask questions
later”**

p32

**“She’s opened
the kimono, and it’s
scaring the pants off
the competition”**

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Cover Trail

How the cover gets made

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"Cover is on Therasanos, the startup that's trying to change the blood testing industry. It's received a lot of praise but is now being questioned over the efficacy of its technology."

"Silicon Valley is a cruel, cruel mistress. Who's the CEO?"

"Elizabeth Holmes. She's been photographed for *Fortune*, *Forbes*, *Inc.*, *T*, *Glamour*, *WSJ*, *New Yorker*, and *Time*. Usually with a neutral expression, wearing a black turtleneck, on a plain background."

"OK, well, *Businessweek* is known for doing things differently while rejecting the status quo and breaking the mold. We're going to shoot her in a biker jacket—but over a formal gown, on a red motorcycle, and the motorcycle will be smashing through old-school blood testing machinery, and she'll be fist-pumping as money rains down over her."

"I'm ready to be blown away."




2

"Neutral expression, in a black turtleneck, on a plain background."

"So, no motorcycle, but it's a good photo. This is also why God invented wiggly typography. The noblest of all typographical gestures. Wiggleness."



3

A STAR ALLIANCE MEMBER 

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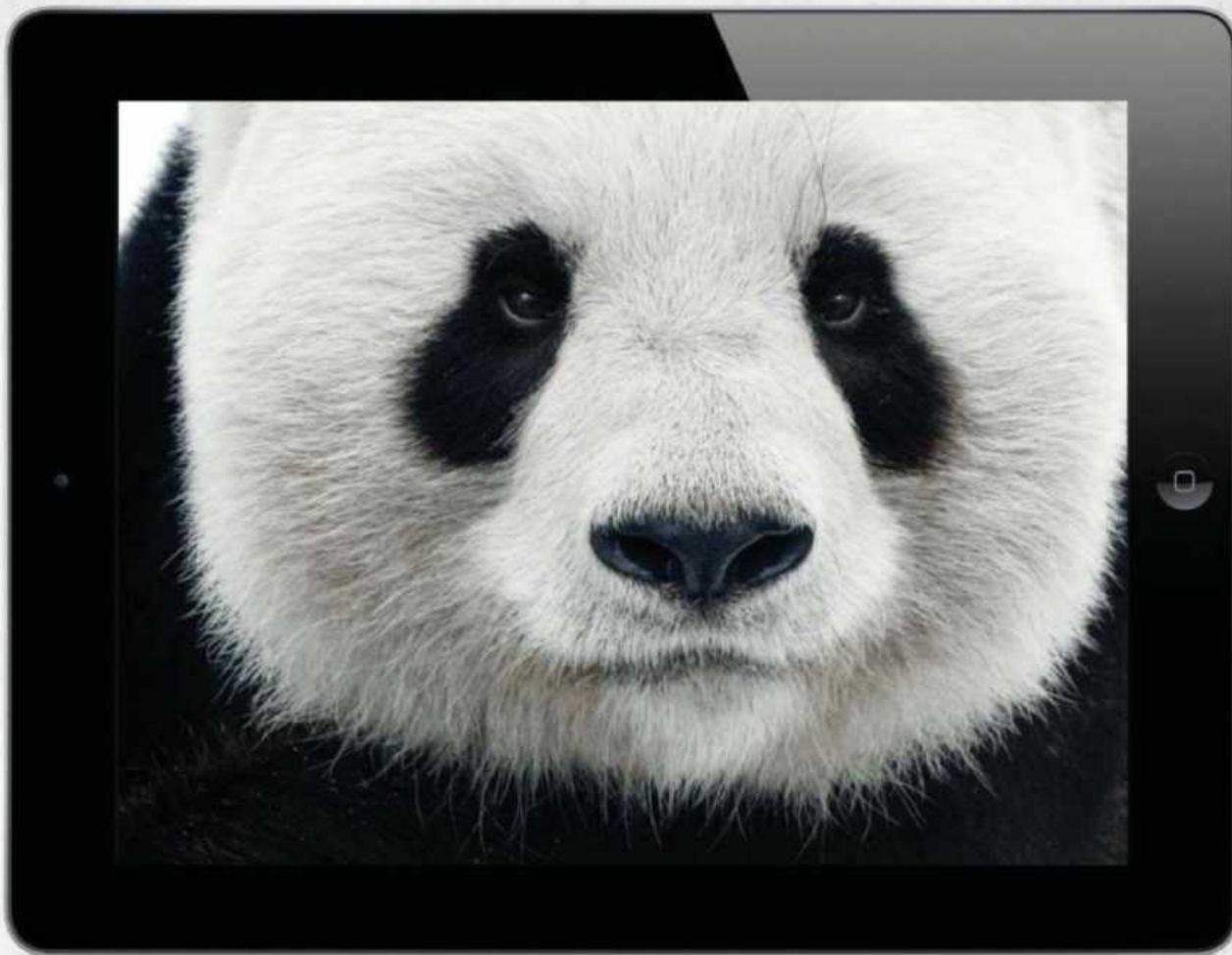
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Opening Remarks

The Most Intimate Terrorism

By Paul M. Barrett

8

Plots outside the command and control of extremist groups are difficult to detect

Since September 11, 2001, the death toll from extremist Islamic-inspired terrorism in the U.S. stands at 45, including the 14 people killed on Dec. 2 by the husband-and-wife shooters in San Bernardino, Calif. That's according to New America, a Washington research organization, which found about the same sad tally—48—for victims of terrorism linked to white supremacists and other right-wing ideologies.

"Lines are blurring between the extremist Islamist threat and the kind of mass shootings we're all too familiar with in America," says Daniel Benjamin, a scholar at Dartmouth College who served as coordinator for counterterrorism at the U.S. Department of State from 2009 through 2012. Regardless of their demented ideas, all of these killers operate outside the command and control of large terrorist groups or even small cells. Like the massacres at a Charleston (S.C.) black church last June and at an Oak Creek (Wis.) Sikh temple in August 2012, the bloodshed in San Bernardino lacked what Benjamin terms "terrorist follow-through": a claim of responsibility, issuance of demands, or effort to make any clear point.

"Talk about random. San Bernardino puts random into a new category," says Karen Greenberg, director of the Center on National Security at Fordham University School of Law in New York. As of this writing, it's still not clear why Syed Rizwan Farook, the American-born son of Pakistani immigrants, or his Pakistani-born, Saudi-raised wife, Tashfeen Malik, attacked a holiday party and training session at the social-services center where Farook worked as a health inspector.

San Bernardino represents the sort of threat emanating from the Islamic State movement in Syria and Iraq that the FBI has been warning about for the past year: Rather than just trying to persuade Muslims in Europe and the U.S. to join the fighting in the Middle East, Islamic State has shifted to calling on sympathizers to commit violence at home. Islamic State's veneer of success—gaining control of territory, obtaining worldwide media attention—may make it an even more potent inspiration than, for example, the Yemeni cleric Anwar al-Awlaki. Authorities have identified the American-born al-Awlaki as having helped from a distance to radicalize the Tsarnaev brothers, who carried out the April 2013 Boston Marathon bombing, and Nidal Hasan, who killed 13 people in a shooting at Fort Hood,

Texas, in November 2009. American forces killed al-Awlaki in a drone strike in September 2011.

As its investigation has deepened, the FBI has said Farook and Malik were radicalized "quite some time" ago and discussed jihad and martyrdom online as early as 2013, before they married. Malik reportedly pledged allegiance to Islamic State on Facebook at roughly the time of the shooting. The FBI continues to note the absence of evidence connecting the killers in a more substantive way to a larger group.

"What we don't know yet is where the radicalization took place," says Benjamin, co-author of the book *The Age of Sacred Terror*. "Did someone drop the ball on intelligence? One of the most unsettling aspects is that the suspects reportedly weren't on the radar screen at all."

In his judicious Oval Office speech on Dec. 6, President Obama warned Americans to resist the impulse to "turn against one another by letting this fight be defined as a war between America and Islam." But he quickly added: "That does not mean denying that an extremist ideology has spread within some Muslim communities. This is a real problem that Muslims must confront without excuse."

That's a far more sensible assessment than the fulminations by several Republican presidential nominees about a "new world war," let alone Donald Trump's widely condemned call to bar all Muslims who aren't U.S. citizens from entering the country until the nation's leaders "figure out what's going on."

But Obama's suggestion that American Muslims must police themselves still rubs some the wrong way. "I don't see why loyal Americans who happen to believe in Islam need to feel guilty or responsible for San Bernardino," says Osama Siblani, a Muslim of Lebanese descent who is a community leader in Dearborn, Mich., and publishes the *Arab American News*. "Do all Christians," he adds, "have to feel guilty about Timothy McVeigh," the Oklahoma City bomber who killed 168 people in April 1995? "By talking about a war on 'Islamic extremism,' some American politicians are going to stir up Islamophobia and only radicalize more Muslims."

There's a difference, of course, between crudely ascribing guilt by association—which could indeed lead to greater Muslim alienation—and reasonably asking American Muslims to keep an eye out for troublemakers. In fact, Dearborn, a small city adjacent to



After the shootout:
The view from inside
the Farooks' pickup

Detroit that has a higher proportion of Arab-Americans and Muslims than any other place in the U.S., is already making such requests—and with some success.

Dearborn officials regularly convene meetings among federal and local law enforcement, social workers, activists, and residents of all religions. In addition, the city's police department sponsors an "intervention" program that invites teachers, parents, and young people to identify troubled individuals—Muslim or otherwise—who appear to be candidates for radicalization. "For any program or policy to be effective, we depend on the total engagement of our community," says Police Chief Ronald Haddad.

Without naming names, Haddad describes a pending case in which Muslim parents turned in their 17-year-old son after he grew a long beard and began talking about violence, Islamic State, and the evils of the U.S. The boy was forced into psychiatric treatment and now faces a competency hearing in court. Without evidence of imminent violence, Haddad says that's a better outcome than a criminal prosecution. "We're looking at ways to prevent a disaster before it happens," he explains.

In another recent case, classmates

alerted the authorities to a high school student who posted Internet pictures of himself posing with his father's guns. The father eventually agreed to surrender his firearms to the police, and the boy is receiving psychiatric care, Haddad says.

Dearborn's approach doesn't ensure violence will never erupt, and it may raise tricky civil liberties issues. But the city's attempt to move proactively merits close study and possible emulation. Haddad has consulted on several occasions with the FBI, which is quietly evaluating whether it can divert certain nonviolent Islamic State sympathizers into counseling rather than arresting them.

That's not an easy call for hard-nosed law enforcement types. "A lot of people in the FBI view the intervention model skeptically, but it's worth exploring," says John Cohen, a Rutgers University criminal justice professor who until last year served as a deputy under secretary at the

The San Bernardino killers may have started planning while they were still dating

U.S. Department of Homeland Security.

To identify likely villains, whatever their motivations, in advance, social science has found common elements, according to Cohen. We'll see whether these characteristics came into play in San Bernardino, but in other cases, they've included family dysfunction, a feeling of being thwarted, and a hunger to leave a mark on history. For a tiny fraction of Muslims, the lens of radical religious ideology magnifies such frustrations and yearnings.

Spending more than \$650 billion a year since Sept. 11 on homeland security, the U.S. has avoided another catastrophic World Trade Center-scale terrorist attack orchestrated from afar. American intelligence gathering and border protections are stronger than those in Europe, making it less likely the U.S. will suffer something like the coordinated violence in Paris that took 130 lives in mid-November. But San Bernardino illustrates a new threat. "Rather than sending operatives, as they did in Paris, [Islamic State] is inspiring disaffected Muslims in the U.S. via social media—a very difficult phenomenon to stop," says Cohen. "We're going to need to be creative in meeting the challenge." **B**

An End to Cuban Exceptionalism

For decades, immigrants from Cuba have received special treatment. That has to stop



Just as U.S. policy toward Cuba has changed, so must U.S. policy toward Cubans—specifically, those Cubans who find their way to the U.S. But the change in immigration policy, like the change in diplomatic policy, needs to proceed carefully, or it may trigger the kind of crisis both countries want to avoid.

For almost a half-century, Cubans have received unique treatment under U.S. immigration law. As long as they set foot on U.S. soil, Cubans are all but guaranteed admission. They can get a green card within a year and are basically exempt from deportation and immigration enforcement policies affecting other noncitizens. Plus, because they're treated as refugees, they qualify for federal assistance and other benefits.

Yet as ties have improved between the U.S. and Cuba, some unforeseen consequences of this policy have become glaringly evident. The easing of travel restrictions by both sides has led to "refugees" who freely shuttle back and forth between the two countries. Unlike other refugees, Cubans can travel home without jeopardizing their U.S. immigration status. Moreover, the lack of rigorous background checks has created what Florida's *Sun-Sentinel* calls the Cuban Criminal Pipeline, a population of petty and not-so-petty crooks, many of whom fraudulently claim federal benefits.

Cuban immigrants have immeasurably enriched the U.S. But the anomalies and widespread abuses of immigration policy toward Cuba have sparked an outcry even among the most die-hard opponents of the Castros. Defending the existing policy is even harder in the face of the much higher hurdles that those fleeing violence in Syria and Central America confront.

Changing the system comes with risks. Fears among Cubans of a shift in policy have already triggered a near-doubling in arrivals during the 2015 fiscal year, ended Sept. 30, to 43,159. A protracted battle to repeal or rewrite the Cuban Adjustment Act, the 1966 law that codifies U.S. immigration policy toward the country, would send even more rushing for the exits.

President Obama could use his executive authority to subject all Cubans who arrive in the U.S., by whatever means, to screening: They'd have to prove they faced a credible fear of persecution before they could be paroled into the U.S. Those who are economic, rather than political, refugees would be sent back to Cuba. That change could be made relatively quickly and might deter many Cubans from making an expensive and now more uncertain trek. After that administrative measure is in place, Congress should then junk the Cuban Adjustment Act.

Of course, the best way to persuade Cubans to stay in Cuba would be for the U.S. Congress to drop its embargo and for President Raúl Castro to speed up the opening of his country's economy and political system. That's the adjustment Cuba really needs.

Women Belong in the Military—and the Draft

Fairness and preparedness demand that females be required to register

The Pentagon has struck a blow for military preparedness and sex equality by opening all combat jobs to women. Allowing female troops who meet the same standards as men to fight improves a nation's ability to protect itself and its interests.

As the military takes this big step, it inevitably comes up against a next one: equality in Selective Service registration. Fair treatment demands that young women—age 18 to 25—be required to sign up. Men have to register within 30 days of their 18th birthday, even if they're disabled or wouldn't realistically be suited for active duty. Failure to do so is a felony, and though prosecution is rare, it can mean ineligibility for federal jobs and benefits, college loans, and driver's licenses.

The U.S. hasn't had a draft since 1973 and has never come close to reinstating it, despite being involved in major wars. But the Selective Service requirement remains essential to keeping the U.S. prepared for the unthinkable. It's important to have a registry of all potentially eligible participants.

In recent decades, American women have demonstrated their ability to serve throughout the military. They now make up 15 percent of active forces and 23 percent of new officers. Last summer two women graduated from the U.S. Army's rigorous Ranger School. In Iraq and Afghanistan, more than 100 have been killed and almost 1,000 wounded. Air Force Secretary Deborah James has said she has no objections to requiring women to register. Army Secretary John McHugh said it is a matter of "true and pure equality."

No female draftee, if it came to that, would be forced onto the battlefield, just as female enlistees won't be. Decisions about exactly what female conscripts would do need not be made ahead of time. All that's necessary now is to acknowledge that, when it comes to military service, women should have the same opportunities—and responsibilities—as men. **B**



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SHALE AIN'T GOT THAT SWING. OPEC DOES STILL

The breathtaking crash in oil prices has generated a new conventional wisdom: America's shale oil industry has supplanted OPEC as the so-called swing producer, rendering the 13-member cartel powerless to affect the price of crude. Speaking on Dec. 7 on Bloomberg Television, veteran oil analyst Daniel Yergin said the emergence of U.S. shale companies as "the swing producer" contributes to oil price volatility, "because you're talking about the impact of decisions made by thousands of individual producers."

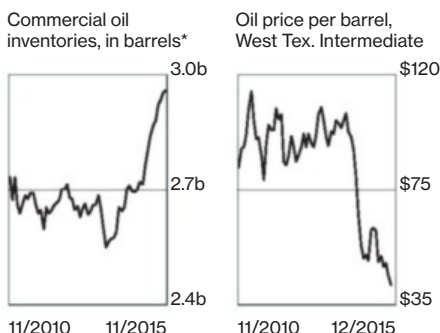
Some close observers of the oil market say this is wrong in several ways. The Organization of Petroleum Exporting Countries remains the only group that can affect the price of oil by purposely raising or lowering output. U.S. shale producers don't coordinate their actions strategically the way OPEC has in the past; they must take whatever price the market gives them. To the degree that American shale producers do influence world oil prices by independently raising output when prices are high and cutting it when they're low, they tend to stabilize the market, not add to volatility, as Yergin contends. Growing supplies of shale oil tamped down volatility resulting from the war in Libya and sanctions on Iranian oil. (A spokesman for Yergin said he was traveling and unavailable for comment.)

Oil is certainly volatile at the moment. The price of West Texas Intermediate, the U.S. benchmark, stood at slightly more than \$100 a barrel as recently as June 2014. But soft economic growth and rising production, including from American frackers, has pushed the price steadily lower. It fell below \$40 on Dec. 4, the day OPEC oil ministers meeting at its Vienna headquarters announced production levels would remain unchanged. The price continued to sag in the following days, reaching a six-year low of \$37.23 on Dec. 9. Inventories in the 34-nation Organisation for Economic Co-operation and Development, up 11 percent since June 2014, are at the

► American producers lack the power to control prices

► "Saudi Arabia is still the swing producer"

A Supply Glut Leads To Cheap Crude



*INVENTORIES OF NATIONS IN THE ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT; DATA: U.S. DEPT. OF ENERGY, BLOOMBERG

◀ their highest levels since at least 1996.

Notice that oil's latest slide didn't occur after a price-setting conclave of U.S. frackers in Houston, because there is no such gathering. It came after a pivotal OPEC meeting in which the cartel's most important member, Saudi Arabia, chose to maintain its market share rather than cut production in hopes of pushing the price up for the good of the cartel as a whole. Traders worry that OPEC member Iran will add as much as 1 million barrels a day to world supply when sanctions are lifted next year. The point being: What OPEC does still matters.

There's a reason the U.S. shale industry is described by Goldman Sachs, the *Economist*, Bloomberg News, and others as a swing producer. It's influential: By contributing to an oil glut, it's kept OPEC from propping up prices. Also, its output, like OPEC's, is closely watched by the market for clues to price trends. But a true swing producer has freedom of action. It has a large market share, spare capacity, and very

Quoted

"Smile and try to be positive (hopefully there will be less smog tomorrow)."

From the website of **China state broadcaster CCTV** on Dec. 8, when pollution levels in Beijing triggered a first-ever red alert, closing schools and businesses. Sales of face masks at one e-tailer almost doubled, reaching 200,000 that day.

low production costs, and it's capable of acting strategically—alone or in a cartel—to raise and lower production to affect the price.

Aramco, Saudi Arabia's state-owned oil monopoly, fits that description; America's shale producers don't—each is too small to move prices on its own, and they don't act in concert. Also, they have essentially no spare capacity, because they're always producing as much as they profitably can. And their production costs are far higher than those of the Saudis or the Kuwaitis. In the language of economics, U.S. shale producers are price takers, not price setters.

"Saudi Arabia is still the swing producer," says Amy Jaffe, executive director of energy and sustainability at the University of California at Davis. Shale producers, in contrast, are more opportunistic than strategic, she says. Prices have fallen below the full cost of exploration and production in many fields, so frackers' output is likely to drop sharply in the next six months as old wells run dry and aren't replaced with new ones. But they will spring back quickly if oil returns to a range at which they can make money, says Jaffe. "If I'm a shale producer, you should think of me like the guy with the foldable lawn chair in a game of musical chairs," she says. "I'm never getting knocked out of the game."

The imprecise use of "swing producer" to describe America's shale industry has real-world consequences, says David Livingston, an associate in the energy and climate program of the Carnegie Endowment for International Peace. "People see this language and reflexively accept it. They think that it means the U.S. can balance the oil market," he says. "It leads people to

think they can turn their backs on the role OPEC plays."

Turning one's back on OPEC now would not be wise. Gluts are poisonous to any cartel, whether oil or diamonds or cocaine. But if the supply-demand balance shifts and the glut disappears, OPEC will once again be able to drive prices higher. By letting prices fall now, the Saudis hope to kill off some higher-priced competition in the medium term, according to Marc Chandler, global head of currency strategy at Brown Brothers Harriman. In a Dec. 8 note to clients, he wrote: "The action of a cartel trying to discipline the market and a collapsed cartel may look eerily similar from a high level of abstraction, but they are as different as a surgeon cutting a patient in a surgical procedure and a stabbing." —*Peter Coy*

The bottom line Oil's drop below \$40 should not be misconstrued as proof that the U.S. shale industry has assumed the role of swing producer.

Corruption

Brazil's Epic Scandal Takes Down a Banker

▶ **Investor confidence plummets as a prominent financier is jailed**

▶ **"Nothing gets done. There's no business"**

Brazilians have become inured to seeing politicians and businessmen marched off to prison for corruption. But the mug shot of banker André Esteves—unshaven and frowning—that flashed across TV screens in early December was a shock. Part of a cadre of mavericks who got astonishingly rich from Brazil's transformation into one of the world's top 10 economies in the 2000s, Esteves helped turn **Grupo BTG Pactual** into Latin America's biggest standalone investment bank. Supremely confident, Esteves—who was a billionaire by his mid-30s—liked to quip that the initials in his company's name stood for "Better than Goldman."

Around dawn on Nov. 25, Esteves's fortunes soured in an instant. Police showed up at his apartment, which faces Rio de Janeiro's legendary Ipanema beach, and hauled him away

Troubled Banks of a Troubling Size

2.7%

Bear Stearns's assets as a share of U.S. GDP at the end of 2007

4.8%

Lehman Brothers' assets as a share of U.S. GDP at the end of 2007

3.5%

BTG Pactual's assets as a share of Brazil's GDP at the end of 2014

on allegations of obstructing a federal investigation into a massive pay-to-play scheme centered on Brazil's state-run oil giant, **Petrobras**. Now Esteves, 47, resides in a cell block with concrete beds and communal toilets at Bangu, a high-security prison in Rio better known for housing drug traffickers and murderers.

Having its founder, chief executive officer, and chairman behind bars has pushed BTG Pactual to the brink of insolvency as clients pull their money out. Within days of his arrest, Esteves had relinquished his controlling stake in the firm, and his partners had begun a wholesale selloff of assets. To avert disaster, Brazil's central bank helped engineer a \$1.6 billion rescue line from the country's privately funded deposit guarantee fund. Still, the bank's shares have lost half their value since Esteves's arrest.

On Dec. 7, prosecutors formally accused the banker of obstruction of justice. Antônio Carlos de Almeida Castro, Esteves's lawyer, says his client has done nothing wrong.

The metastatic graft scandal that sent Esteves to jail threatens more than the survival of BTG. So many legislators are implicated, Congress has been unable to pass legislation to contain an exploding budget deficit. President Dilma Rousseff has grown so unpopular that lawmakers are maneuvering to impeach her for allegedly cooking the government's books. Meanwhile, the economy is sliding into what Goldman Sachs calls a full-blown depression.

BTG's collapse won't cause Brazil's capital markets to seize up as Lehman Brothers' failure did in the U.S. in 2008. Yet having one of the country's most prominent financiers behind bars is a body blow to the confidence of investors at a time when Brazil needs their cash. "It very much gives you the impression that the corruption scheme is so widespread that it induces a kind

of counterparty risk," says Monica de Bolle, a former International Monetary Fund economist. "You enter into transactions with people in Brazil without knowing whether or not they might be implicated in something." The result: "Nothing gets done. There's no business," she says.

Esteves started working as a computer technician at BTG's predecessor, Banco Pactual, when he was a 20-year-old college student. He quickly moved up the ranks, first to fixed-income trader, then to head of a nascent asset-management division. In 1998, Esteves joined forces with three other partners to oust his mentor, Luiz Cezar Fernandes, one of Pactual's founders.

As Brazil boomed in the 2000s, the bank became a powerhouse in initial public offerings, asset management, M&A advisory, commodities speculation, and securities trading. Esteves's rechristened BTG Pactual bought banks in Chile and Colombia and opened offices in Hong Kong, Switzerland, and the U.S. He fostered a collegial culture that put a premium on getting deals done quickly, says one former executive at the bank who didn't want to be identified. On Sundays, he'd invite executives over to his home to talk shop over pizza.

Esteves doesn't flaunt his wealth, but he trumpets his success in other ways. Though not an alum, he's donated millions to Harvard Business School. His largesse paid for the renovation of a dorm that was renamed Esteves Hall. "We are saddened by his arrest and by the charges that have

been brought against him," says HBS media director Jim Aisner.

"It's the fame that gets you," says Marcelo Battisti, a financial consultant in São Paulo who used to work as a credit manager at Banco Itaú, a BTG competitor. "Esteves was on the cover of magazines."

In 2006, Esteves became the youngest billionaire in Brazil's history when he sold Pactual to UBS in a deal worth \$3.1 billion. After the financial crisis he bought it back at a big discount. He also picked up Lehman Brothers' Brazilian unit, which was later renamed BTG Pactual Alpha Participações. Alpha became one of the vehicles Esteves, BTG, and its partners used to buy assets that had little to do with banking.

Esteves plowed money into oil wells in Africa, high-end gyms in Rio, and a garbage disposal business operating in Brazil, Argentina, and Colombia.

It was one of the earliest and least conspicuous of those acquisitions that would land Esteves in jail. In 2009, Alpha took over a chain of gas sta-

tions in São Paulo. One of its partners in that deal was Carlos Santiago, a gas-station tycoon who had a history of run-ins with regulators and lawmakers. In 2002 he was questioned as part of an inquiry into illegal gasoline sales by São Paulo's state, after his businesses were cited more than 200 times by the National Petroleum Agency for multiple violations. (Santiago said at the time that some fines were for fuel deliveries he didn't control.)

The gas-station business, **Derivados do Brasil**, went largely ►



◀ unnoticed until word leaked early this year about sworn testimony in the Petrobras corruption case by admitted money launderer Alberto Youssef. In November 2014, Youssef told investigators he delivered 6 million reais (\$1.6 million) to a frontman for the Brazilian Labor Party. According to a summary of the testimony filed in court, the money was a kickback for a 10-year, 300 million-

BTG Pactual share price



real contract that Santiago signed in 2011 to rebrand the Derivados gas stations with the Petrobras logo. Last July cops raided Santiago's São Paulo offices and seized millions of reais in cash, according to TV news reports. Santiago declined numerous requests for comment through his lawyer.

The case against Esteves turns on an encounter last month between Bernardo Cerveró—the son of Nestor Cerveró, a convicted former executive at Petrobras's fuel unit—and Delcídio Amaral, the senate leader for the ruling Workers' Party. Nestor Cerveró was planning to sign a plea agreement with prosecutors in the Petrobras corruption investigation. In exchange for leniency, he would detail the alleged involvement of Esteves and BTG in the gas-station kickback, as well as evidence of Amaral's involvement in other Petrobras schemes. According to a Supreme Court magistrate's arrest orders, issued on Nov. 24, Amaral knew about the plea deal because Esteves had obtained a sealed copy.

On Nov. 4, Amaral met with the younger Cerveró at the Golden Tulip hotel in Brasília to get him to persuade his father not to cooperate with the investigation, according to the magistrate's arrest order. In transcripts of the conversation, which Cerveró secretly recorded, Amaral proposed paying Cerveró's family at least 50,000 reais a month for keeping his and Esteves's names out of any testimony he'd provide the government. And, if Nestor Cerveró were to win temporary release from prison, he would be whisked off to Spain in a

private jet, with Esteves financing not just the escape but the payments to the family. Esteves didn't attend the meeting.

Castro, Esteves's lawyer, says the contents of the conversation are hearsay and that Amaral used his client's name without his knowledge. Esteves, he says, doesn't even know Nestor Cerveró.

BTG, in a statement, says the investment in the gas-station chain was made by Alpha, which is owned by the bank's partners, not the bank itself. Yet corporate records show it wasn't until March, just after Youssef's testimony was revealed, that the unit's name was changed to Partners Alpha Participações, effectively erasing its association with BTG Pactual.

Esteves's life in Bangu is far from luxurious. He has his head shaved to keep away lice. Guards, wary of contraband, can search his food and chop up his soap. His wife, Lilian, must line up outside the prison and, like all other visitors awaiting entry, must put up with the stench from a nearby landfill. "He's perplexed," Castro says. "He says, 'I don't understand why I am in jail.'" —*Michael Smith, Blake Schmidt, and Sabrina Valle, with Jonathan Levin, Cristiane Lucchesi, and Francisco Marcelino*

The bottom line The allegations surrounding the jailing of a banker detail the sordid connections between politics and business in Brazil.

Housing

China's Millennials Are Happy to Share

▶ Co-living and co-working spaces are cropping up in big cities

▶ "Not a conformer to existing rules? We want you!"

Two decades ago, **Tyler Xiong's** parents—like many Chinese—were required to live in a commune, run by the state-owned enterprise they worked for. Today, Xiong, 28, is one of 500 people residing—willingly—in a co-living space called You+ near China's Silicon Valley, in the northern part of Beijing. For budding

entrepreneurs, You+ provides shared facilities that include basic bedrooms and bathrooms, offices and workspaces, and amenities such as gyms and bars. Rents start at about \$300 a month for a shared bedroom and bath. Over the past three years, almost 5,000 people across the country have moved into You+ communities, concentrated in Beijing, Shanghai, and the southeast coastal city of Guangzhou.

"Instead of working for years at a company to gain some capital, such a place allows young people to experiment with their startup ideas at very low costs," says Su Di, the 36-year-old You+ co-founder who lives with his wife in the same Beijing building as Xiong. The converted school houses about 60 startups, including mobile game developers and video production companies. The You+ name is Su's attempt to inspire the residents to look beyond their own ideas and ambitions. "There's an element of brainpower sharing when people bounce ideas off of each other in a space like this," says Xiong.

Because many young Chinese have



Residents work, or nap, in a shared space at a You+ in Beijing

been priced out of big cities, Su's project helps them stay close to where their businesses will have a better chance of success. The first You+ location opened in 2012 in Guangzhou. "The coast is very different from the rest of the country," says Tyler Cowen, an economics professor at George Mason University. "It has much better jobs, and that difference is only going to grow as China slows down. People are going to do all kinds of things to adjust, so that's where the sharing will happen."

Lei Jun, the founder of smartphone giant **Xiaomi** and China's seventh-richest man, was the lead investor in a 100 million-yuan (\$15.6 million) round of fundraising for You+. Having struggled to start his company, Lei wanted to help young entrepreneurs. Su says there will be almost 20 You+ locations up and running by early 2016, from 12 currently.

In a recent survey, Nielsen found



that 94 percent of Chinese are open to the concept of a sharing economy, compared with 43 percent of North Americans. That acceptance has given rise to businesses such as **Didi Taxi**. Co-founded

by former Alibaba employee Cheng Wei, it's **Uber's** largest local competitor and valued at about \$16.5 billion. **Tujia**, a Chinese version of Airbnb, joined the \$1 billion club in August. Sharing services for apparel, sports equipment, even pets, are popping up across the country. According to a report from PwC, the global sharing economy will amount to \$35 billion by 2025, up from \$15 billion today.

Xiong owns two pairs of shoes and fewer than 10 outfits. He has no car and relies on Didi Taxi to get around. His attitude and that of many of his peers: Why buy when you can rent?

After working as a manager at gum maker Wrigley in Shanghai for two

years, Xiong moved to Spain in 2013 to study economics. He returned to China last year and joined a bitcoin mining startup in Beijing that has generated about \$3 million of the currency. At You+, he shares a bedroom with three others. He sleeps on a single mattress laid on the concrete floor under a loft bed. Xiong says he prefers to plow his earnings back into the startup rather than spend the money on himself.

Married couples are welcome at You+, as are pets, but kids aren't allowed because the lifestyle isn't deemed conducive to raising a family. People over 45 are discouraged, but it's not a hard-and-fast rule. Wealth isn't a factor—the founder of a popular restaurant chain lives in Xiong's building.

A bulletin board near the entrance is covered in pink and yellow Post-it notes from residents hoping to trade services—a back rub in exchange for a dog walk, for instance. "Seeking idealistic coder with passion to change our world," says one note. "Not a conformer to existing rules?" another says. "We want you!" ▶



A courtyard at a Beijing You+, which is housed in a converted school

◀ On the door of the common kitchen at the Beijing location is a notice with a QR code inviting residents to join a house committee via the messaging app WeChat. They discuss rules, shared costs, and how to divvy up cleaning duties. Sometimes conflicts arise. Noisy roommates are a common complaint, according to Su.

Xiong says what makes You+ different from the communes of his parents' generation is respect for private property and the way technology enables residents to share. "I am a person of my times," he says. "But this is also my choice."
—*Bloomberg News*

The bottom line China's sharing economy is growing quickly, as more young people spurn private ownership.

Consumer Debt

For Indebted Russians, A Holiday Staycation

▶ Consumers who binged on credit wind up on Russia's no-fly list

▶ "The growth rate in overdue debt has been huge"

Russians looking to find some warm weather this holiday season are running into some tricky roadblocks. In November the government imposed strict new bans on travel to Egypt and Turkey, two of the most popular vacation destinations for Russians, in response to the terrorist bombing of an airliner over Sinai and the shooting down of a military jet near the Turkish border with Syria. The government has also restricted the foreign travel of citizens with overdue loans and unpaid bills.

A record 1.4 million Russians have been grounded this year through September under a law that bans deadbeats from leaving the country, according to Russia's Federal Bailiff Service. About 600,000 are now on the no-fly list, says the agency, which enforces the ban. "The growth

rate in overdue debt has been huge, up 40 percent this year, and it will get worse before it gets better," says Elena Dokuchaeva, chairman of Sequoia Credit Consolidation, one of Russia's largest debt collection agencies, which is partially owned by **Goldman Sachs**.

A decade of high oil prices fueled a consumption boom among Russia's middle class, as people splurged on pricey vacations, TVs, and cars, all on credit. From 2010 to 2014, Russia's consumer credit market grew at a double-digit rate, according to the country's biggest lender, **Sberbank**. Along the way, conspicuous consumption helped turn Moscow from a consumer backwater into a city with an iPhone usage rate on par with New York's.

Russia's credit party began to wind down around 2013, as its economy slowed. Over the past year, the drop in oil prices and Western sanctions, imposed to punish Russia for its incursions into Ukraine, have combined to hammer both lenders and borrowers. The sanctions cut off Russian banks from foreign capital markets, causing them to tighten their lending standards, which has trickled down through the economy. "The economic crisis has made good-faith borrowers lose income or end up unemployed," says Oliver Hughes, chief executive officer of **Tinkoff Bank**, one of Russia's largest issuers of credit cards.

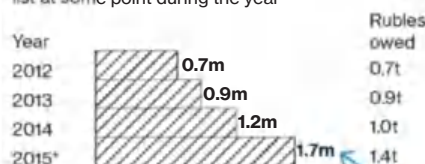
Now with the economy in recession, many Russian consumers are paying back loans with interest rates as high as 45 percent, according to Sequoia. Last year, 1 in 8 Russian debtors had at least three outstanding loans, according to the National Bureau of Credit Histories.

Delinquency rates are soaring as double-digit inflation erodes Russians' disposable income. Desperate for cash, some Russians are turning to loosely regulated microfinance organizations that charge annual rates as high as 880 percent.

The retrenchment is reflected in sales of everything from washing machines to international travel. Retail sales have plunged, with the October numbers showing the biggest drop in 20 years. Rising default rates have driven some banks to the

Grounded

Number of Russians on the no-fly list at some point during the year



*SEQUOIA CREDIT CONSOLIDATION ESTIMATES DATA: FEDERAL BAILIFF SERVICE OF RUSSIA

edge. Vodka magnate Roustam Tariko, who in better times was known for flying in a private jet accompanied by Miss Russia, pushed bondholders in October to restructure \$550 million in debt to save his **Russian Standard Bank**, which focuses on consumer loans and credit cards.

It's a better deal than some other consumer lenders got. Russia's central bank in November shut down Svyaznoy Bank, the lending arm of one of Russia's largest cell phone retailers, when it ran short of capital after aggressively expanding consumer loans before the crisis. Other banks are getting creative to keep the payments flowing. "We've hired a few people for our cloud call center" from among customers who are behind on their loans, says Hughes of Tinkoff Bank.

Debtors are often confronted by collection agencies that some consumer activists accuse of resorting to aggressive measures. Igor Kostikov, chairman of Finpotrebsoyuz, a non-profit for consumers in debt, says "tactics can include calling at all hours of the day and night, approaching delinquent debtors via their relatives or workplace," verbal harassment, and threats of violence.

Russia's credit bureau says the number of people with three or more outstanding loans—a red flag for banks—has fallen 37 percent since the start of the year. The bad news? There are still 3.1 million Russians in the category most at risk to fall into arrears, at which point they too could lose their right to leave the country.

—*Jake Rudnitsky and Anna Baraulina*

The bottom line Last year, 1 in 8 Russian debtors had three or more outstanding loans, some with interest rates as high as 45 percent.

B Edited by Cristina Lindblad, Matthew Philips, and Dimitra Kessenides
Bloomberg.com

"Tactics can include calling at all hours of the day and night, approaching delinquent debtors via their relatives or workplace."
—*Igor Kostikov, consumer debt activist*

About 45 percent are on the list over unpaid bank debts



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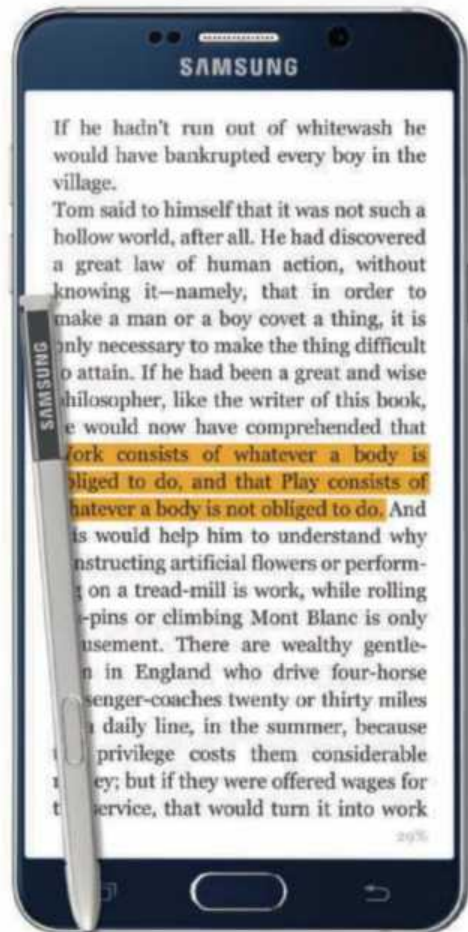
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Small Suppliers

Big Problems

► **Chipotle's strengths are suddenly its weaknesses, too**

► **"It strikes deeper...because so much of their story is based on the quality of their ingredients"**

After years of winning customers and investors with its promise of healthy fast food and premium burritos, **Chipotle Mexican Grill** and its business model have been upended by a far-reaching E. coli outbreak. Sales have plummeted. So has the company's stock as investors bet that its woes are far from over. All of a sudden, highly processed industrial food doesn't look so bad.

The outbreak linked to Chipotle has sickened at least 52 people in nine states. And pinpointing the source of the contamination hasn't been easy, in part for the very reasons consumers have been drawn to the burrito specialist. Unlike the big burger-and-fries brands, which deal with a handful of large beef and potato suppliers and distributors, Chipotle's 1,900 restaurants depend on a more complex supply chain that includes

scores of small, independent farmers. That's a great way to attract would-be locavores and the farm-to-table crowd, which usually looks askance at **McDonald's** and its kin. But it can also lead to ingredient shortages and questions about food safety.

When Chipotle can't deliver on its healthy and fresh promise, its greatest strength can turn into its biggest weakness. "It strikes deeper at their brand, because so much of their story is based on the quality of their ingredients," says Allen Adamson, former North America chairman of branding firm Landor Associates. "This can clearly do long-term damage if they don't get it under control."

Chipotle says it's begun a "farm-to-fork assessment" of each ingredient it uses, and that it's tightened supplier standards, reexamined its food safety protocols, and changed how

it handles tomatoes and cilantro. Nonetheless, sales tumbled 16 percent in November, prompting the company to rescind its 2016 sales forecast and announce a \$300 million stock buyback to shore up its sliding shares. Chipotle's stock is down 22 percent over the last four months, the worst performance among restaurant companies in the Standard & Poor's 500-stock index.

Managing a supply chain that consists of more than 50 independent farmers can be like herding cats. An increased risk of contaminated produce is just one difficulty. Another challenge is securing a reliable flow of responsibly grown products with fewer chemicals and no antibiotics in the volumes that a \$4.1 billion restaurant chain demands. In recent years, Chipotle has occasionally struggled to fully stock its stores with

◀ hormone-free chicken, grass-fed beef, and pork raised at noncorporate farms (the company says 95 percent of U.S.-raised pork doesn't meet its standards). And it has warned it may have to stop selling GMO-free salsa and guacamole because of rising costs.

Earlier this year, the company suspended a pork supplier after an audit determined it wasn't meeting Chipotle's standards for housing pigs, which call for "deeply bedded barns" and access to the outdoors. Chipotle was forced to pull carnitas from about a third of its restaurants, and it took the chain months to find additional pork suppliers. The absence of carnitas dragged on sales and led investors to question whether the chain's much-ballyhooed food standards might restrain its growth.

In the wake of the E. coli cases, Chipotle says it's reevaluating its local produce program, which began in 2008. The program mainly runs from June through October, the growing season in most of the U.S. Any pullback would hit at the heart of Chipotle's culture and marketing, which has touted its support of small farmers and sustainable agriculture.

"You can never eliminate all risk, regardless of the size of suppliers, but the program we have put in place since the incident began is designed to eliminate or mitigate risk to a level near zero," Chris Arnold, a spokesman for Chipotle, said in an e-mail.

Even before the outbreak, Chipotle was struggling with slowing growth, with sales at established stores rising only 2.6 percent in the third quarter (before the latest health scare began), compared with 19.8 percent a year

earlier. The company has faced higher food costs associated with sourcing GMO- and hormone-free ingredients. It also had to step up its advertising spending this summer "to keep Chipotle top of mind," Chief Financial Officer Jack Hartung said in October.

This isn't the first time Chipotle has hit a bump. It posted a meager 2.2 percent gain at established restaurants in 2009, leading to questions that the chain may have plateaued after growth of more than 10 percent in two of the previous three years. But that turned out to be a rare off year. Chipotle's sales at established stores rose 17 percent in 2014.

The company may be facing a more serious challenge this time. What initially appeared to be an E. coli outbreak limited to the Pacific Northwest, where Chipotle closed 43 restaurants in Oregon and Washington, took on larger proportions when the Centers for Disease Control and Prevention said there were cases in additional states.

The string of incidents has raised concerns about the company's business model. "I worry about the small, local supplier who doesn't have the resources to track the latest things to do on food safety," says David Acheson, a former Food and Drug Administration official who now runs a food safety consulting business. "They're small operators, and you simply don't have the infrastructure and the capacity to keep up with this stuff."

In July a smaller Chipotle-linked E. coli outbreak occurred in Washington, sickening five people. Another Chipotle, in California, saw about 180 customers sickened by an outbreak of norovirus during the summer. In September salmonella infected dozens of the chain's customers in Minnesota. In that case, tainted tomatoes were to blame. And in early December, as news of the latest E. coli scare made headlines, Chipotle closed a restaurant in Boston following complaints of "gastrointestinal symptoms" from Boston College students, including members of the men's basketball team.

"It's not very common to see outbreaks linked to the same place, the same brand, in a couple of months with different issues," says Benjamin

Chapman, an associate professor and a food safety specialist at North Carolina State University. "It does make you wonder how they're managing food safety as a whole."

—Craig Giammona and Leslie Patton

The bottom line After E. coli-tainted food sickened 47 customers, Chipotle is rethinking using local farms—one of its key marketing points.

Chemicals

A Merger That Activist Investors Can Love

▶ **A Dow Chemical-DuPont matchup could finally quiet hedge funds**

▶ **"It's not about getting bigger, it's about becoming more focused"**

The merger talks between **Dow Chemical** and **DuPont** leaked on Dec. 8, aren't just about putting together a \$120 billion deal, an industry record. It's about more than possibly creating the world's largest seed and pesticide company and the No. 2 chemical company, after Germany's **BASF**. The merger also says a lot about the power of corporate activists and the growing pressure they and other investors are putting on corporations to streamline their businesses.

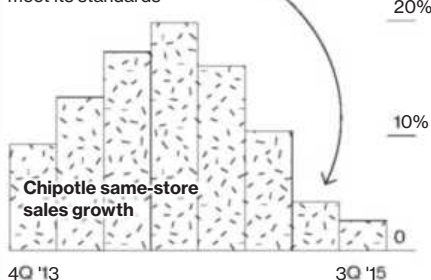
The talks follow a tumultuous period for both companies. DuPont's chief executive officer, Ellen Kullman, stepped down in October, five months after winning a proxy battle waged by activist investor **Triun Fund Management**. At Dow, CEO Andrew Liveris, who led the company's recovery from near-insolvency during the financial crisis, has also faced pressure from an activist shareholder—Dan Loeb's **Third Point**.

The behemoth that emerges would likely break into three businesses—agriculture, specialty chemicals, and commodity chemicals—to create more focused companies, according to a

A deal that may form the world's No. 2 chemical company came after investor pressure

No Carnitas? No Thanks

Hundreds of locations stop selling pork after the company drops a vendor that doesn't meet its standards



Farmhands

12-month agricultural revenue

Syngenta

\$15.3b

Monsanto

\$14b

DuPont

\$10b

Dow Chemical

\$6.6b

Merged company

\$16.6b

It fought off a takeover by Monsanto this year. Analysts expect other offers to surface.

United Technologies and then consider spinning off or selling its own information systems unit. And **Pfizer** and **Allergan's** recently announced \$160 billion marriage would involve dividing new drugs and older, less profitable ones into separate businesses.

"It's not about getting bigger, it's about becoming more focused," Marijn Dekkers, CEO of drugmaker **Bayer**, said on Dec. 9. "That is a trend that we have been seeing for a long time. Companies are saying that it's difficult to be positioned so broadly."

Whether regulators will allow reshufflings to occur is uncertain. Bloomberg Intelligence analyst Jason Miner says the focus of the antitrust review may be on the agricultural businesses.

Analysts at Helvea-Baader Bank estimate the combined Dow-DuPont would sell about 16 percent of the world's pesticides and be the third-largest supplier of crop chemicals. Even so, the merged company will still have large rivals such as **Syngenta**, **Monsanto**, and **Bayer**, Miner says. "It's much more complementary than competitive," he says. "It seems a lot more viable than you would think from the headline—major U.S. chemical company buys major U.S. chemical company." —*Lydia Mulvany and Jack Kaskey, with David McLaughlin, David Fickling, Alice Baghdjian, and Sheenagh Matthews*

The bottom line If completed, a combined Dow Chemical and DuPont would have 16 percent of the world's pesticide business.

Bicycles**A Big Bike Maker Steers Uptown**

► **Taiwan's Giant has squeezed its way into the Tour de France set**

► **For cognoscenti, "truly cutting-edge design and technology"**

Among professional riders and cycling magazine reviewers, the Propel isn't just a high-performance racing bicycle—it's an engineering marvel. The bike, which retails in the U.S. for \$2,200 to \$9,000 depending on the features selected, has a carbon-fiber frame so light you can lift it with one

hand. It's so fast it promises to shave 12 seconds to 36 seconds off a race time. German rider John Degenkolb used it for his final sprint in this year's Tour de France.

But the Propel, named *Cycling Plus* magazine's bike of the year this year and last, isn't the handiwork of prestige Italian or North American brands such as Cannondale, Colnago, Pinarello, or Cervélo. It's made by Taiwan's **Giant Manufacturing**, the world's biggest bike maker and one until recently better known as a contract manufacturer for **Trek**, **Scott**, and other popularly priced rides. "Giant may lack the cachet of historic Italian or American innovators like Cannondale, but for those in the know, the Giant brand represents truly cutting-edge design and technology," says Warren Rossiter, senior technical editor for road at the U.K.-based magazine group that publishes *Cycling Plus* and *BikeRadar*.

Giant is taking advantage of the mounting accolades for its newer, higher-end bikes to position itself among the prestige brands in the industry. During this year's Tour de France, it ran 65 television commercials on NBC—a first for the brand. It's also planning to expand the number of U.S. shops where its bikes are a majority of the inventory, from the current 125 partner shops to 155 by the end of 2016. That's in addition to the almost 1,000 American stores that carry Giant bikes along with other models. Its U.S. unit in September began rolling out its bike-fitting system, which allows riders to customize their bike just as they would a tailored suit. The company is initially putting the fitting system in 10 stores in bike-savvy locales, such as California's Santa Monica beach, and plans to sell the system in as many as 250 stores within five years, according to John Thompson, Giant USA's general manager.

Tony Lo Hsiang-an, Giant's chief executive officer, says that while Giant is "not as sexy as some of the brands," the company's innovations will change that more than any marketing campaign can. Giant, for instance, has put brakes behind the wheel forks to decrease drag and strengthened the handlebar post to reduce wobbliness at high speeds. In addition to ►

person with knowledge of the matter who asked not to be identified because the information is private. "This is really what the activist investors of both companies ultimately wanted, which is to break up these companies into the component parts that have superior growth opportunities and those that are more commodity, cyclical type of businesses," says James Sheehan, an analyst at SunTrust Robinson Humphrey.

Liveris has aimed to reshape Dow into a producer of higher-margin products by selling off volatile, commodity-like businesses; it's consistently beaten analysts' earnings estimates since the start of 2014. Yet Third Point last year campaigned against Dow for failing to meet financial targets and called for a breakup. Dow let Loeb nominate two members to the board, averting a proxy fight a year ago, and both sides agreed to a truce set to expire in mid-December—less than a week after the merger talks came to light.

The build-and-breakup model reportedly being studied by Dow and DuPont is increasingly popular. **General Electric** this fall spent \$10 billion buying Alstom's gas turbine business. At the same time it spun off its financial unit, GE Capital, and tried in vain to sell its home appliances division to **Electrolux**. **Lockheed Martin** said in July it would buy the helicopter maker Sikorsky from

Pedal Power



An employee assembles spokes to a wheel frame at Giant's bike plant in Taichung, Taiwan

five frame sizes to fit different riders' heights, the bike maker is offering its fitting system to casual riders who buy aluminum-frame bikes that cost as little as \$330.

While other brands offer customization systems, Thompson says, Giant's \$5,000 fitting system apparatus costs bike retailers considerably less than rivals'. "Strategy-wise, we have no intention to become just a very fancy brand," Lo says. "Our root is still technology and quality. Everything we do, we must have very good reasons why we do that. I think some brands, they are more marketing, more talk, but I believe ours should be real."

The message seems to be working: Sales in the U.S., where Giant is third-largest behind Trek and Specialized among specialty bike retailers, rose 13.8 percent in the first half of 2015 from a year earlier, according to Giant, while the industry's growth was flat. They're also up almost 7 percent in Europe for that period, despite the drop in the value of the euro. The company's sales are falling only in China, its biggest market, where the slowing economy led to an 8.5 percent decline in the first half.

At its high-tech factory in Taichung, on Taiwan's western coast, which can make more than 2,000 models and turn out 5,000 bikes a day, frames for Scott and Trek bikes can be seen coming off the same assembly line that produces Giant-branded cycles. Giant is an original equipment manufacturer, or OEM, that makes

products for those brands and others such as Colnago. That doesn't mean the bikes are the same. The individual brands provide designs, specs, and some parts; Giant provides the manufacturing and workers.

Manufacturing for others "helps us understand the overall market situation," says Chairman "King" Liu Chin-piao, who founded Giant in 1972. "It helps our management do planning and not make silly mistakes." A robust 81-year-old, he bikes to or from the office every day, a two-and-a-half-hour ride—though nowadays he's followed by a car after having had an accident last year.

Women are a new market for Giant. It sells racing bikes, branded as Liv, designed for women's bodies, rather than producing smaller frames painted pink or lowering the crossbar as some other brands have done. In the U.S., Giant

has 80 Liv ambassadors—women who lead local bike tours and host events—and there are dedicated Liv stores in Dubai, Shanghai, and Taiwan. "You cannot take a men's bike and make it smaller," Lo says. "That's wrong. So we are doing it from zero."

"I think Giant is the best-positioned right now of any company in the global bicycle business, because of the combination of the OEM business and its brand positioning," says Jay Townley, a partner at Gluskin Townley Group, a U.S. consulting firm that researches the bicycle market for clients such as the National Bicycle Dealers Association. "They are able to take a look at the market and think about the best mix, the best way in which they

Propel Advanced Pro 0 \$2,200-\$5,650

- ① Brakes behind the forks reduce drag
- ② Carbon-fiber frame combines light weight and strength
- ③ Reinforced handlebar post reduces wobble



will be able to control the market."

Now Giant needs its brand image among consumers to match its quality, Rossiter says. That could be a challenge, since "Made in Taiwan" is a phrase filled with echoes of a less technological past. "Perhaps the perception is that the brand doesn't have the soul or heritage of the old European marques and that they don't shout as loudly as American or German brands when it comes to technical innovation," he says. "If anything, I believe it may be a cultural issue, that they don't promote their strengths as well as other brands." Lo, however, wants his bikes to do the talking. —*Sheridan Prasso and Cindy Wang*

The bottom line Taiwanese bike maker Giant's U.S. sales grew 13.8 percent in the first half of 2015, as it pushed higher-end products.

Airlines

Putting Its Money Where Its Schedule Is

► **United guarantees on-time flights for big corporate customers**

► **"If it were a short-term blip, we wouldn't be making this" promise**

United Airlines, which has spent much of the past three years near the back of the punctuality pack among U.S. carriers, would seem to be the last airline to guarantee business fliers they'll arrive as scheduled. Yet United is promising its best corporate customers

"Everything we do, we must have very good reasons why we do that. I think some brands, they are more marketing, more talk, but I believe ours should be real."
—*CEO Tony Lo*

it will be as reliable as **American Airlines** and **Delta Air Lines** next year, or offer credits for upgrades and fees. The guarantee is based on rising flight reliability rates that pushed the carrier to among the top half of its peers, says Jim Compton, United's chief revenue officer. New union agreements also could speed performance. "If it were a short-term blip," Compton says, "we wouldn't be making this commitment."

The offer, which follows a similar pledge by Delta last summer, marks a move beyond airfare discounts and available flights as the main reasons corporate travelers choose an airline. A key difference is that Delta's credits can be used to pay fares, while United's will be good only toward seat upgrades and other ancillary costs.

United had been mired in 10th place among 13 U.S. carriers for on-time arrivals for the 12 months ended in September, with a rate of 76.5 percent, according to U.S. government data. But its ranking jumped to fifth in September, with a rate of 86.2 percent. It logged similar rates in October and November, says researcher FlightStats.

The carrier's new "global performance commitment" will cover domestic, international, and regional flights in 2016, while Delta's includes just its domestic mainline operations. United will count flights as on time only if they meet or beat scheduled arrival times; Delta counts those that land within 14 minutes of their scheduled arrival. Delta spokesman Anthony Black says reaction to its guarantee program has been "overwhelmingly positive."

United's compensation would include upgrades to cushier Economy Plus seating, and waivers of change fees and charges for name changes (letting a company transfer a ticket to a different employee). Eligibility depends on how much travel a company does on United. Says Dave Hilfman, the carrier's senior vice president for worldwide sales: "They find this has every bit of as much value as if we were offsetting fares."

—Michael Sasso

The bottom line After rising to fifth place from 10th in on-time arrivals, United Airlines is trying arrival-time guarantees to woo corporate travelers.

Briefs

By Ira Boudway

Chip Shot

●●● The European Commission has accused U.S. chipmaker **Qualcomm** of engaging in anticompetitive behavior. Regulators say Qualcomm's sales tactics, including paying a smartphone manufacturer to use its chips exclusively, have abused its position as the world's leading handset chipmaker and pushed out competitors. Qualcomm says its practices comply with

EU laws. ●●● **Anglo American**, one of the world's biggest mining companies, is closing mines and cutting jobs to cope

with the collapse in commodity prices. The London-based company plans to reduce its workforce to 50,000 from 135,000 as metal prices remain near their lowest in six years. ●●● The

Federal Trade Commission has asked a federal court to delay the \$6.3 billion merger of **Staples** and **Office Depot**, pending the outcome of an administrative challenge scheduled for May. The FTC opposes the merger, saying it would "create a giant compared to the next largest vendor" and lead to price increases. Both retailers have vowed to fight the agency's move. ●●● **Volkswagen** all but eliminated one front in its pollution scandal. The company said errors in carbon

dioxide emissions discovered in November are slight and affect only a fraction of the 800,000 vehicles involved in an internal investigation. The carmaker still faces as much as \$9.4 billion in legal damages after it admitted to duping emissions tests on diesel models. ●●● **Yahoo!** scrapped its plan to sell a \$31 billion stake in Chinese e-commerce company Alibaba Group after pressure from investors concerned about the tax risks.



Cleveland Cavaliers star LeBron James signed a lifetime endorsement contract with **Nike**. Financial terms weren't disclosed, but the deal is said to be worth more than \$500 million.

The number of original TV series that **Netflix** says it plans to produce in 2016. The company has a budget of \$5 billion for the year to develop and buy TV series and movies.

31

CEO Wisdom

"Our divestiture of SABMiller's interest in MillerCoors will create an even more competitive marketplace, building upon what is already a golden age of consumer choice in American brewing."

—Carlos Brito, Anheuser-Busch InBev CEO, testifying to Congress on his company's proposed takeover of SABMiller





The Long Unwinding Map

► State redistricting plans are still being challenged across the country

► “You might want to say, ‘Let’s both agree to a fair process’”

On Dec. 2 the Florida Supreme Court approved a plan to replace the congressional district maps used in the 2012 and 2014 elections, which the court’s 5 to 2 majority concluded were unfairly drawn because of a “conspiracy” among Republican operatives. The new boundaries could help Democrats, who hold 10 of the state’s 27 seats, pick up two more in 2016. The ruling, the court wrote, “should bring much needed finality to litigation concerning this state’s congressional redistricting that has now spanned nearly four years in state courts.”

Courts typically try to expedite election-related legal challenges, because the damage is difficult to undo once ballots are cast. But litigation in Arizona, Maryland, North Carolina, Texas, and Virginia may drag on beyond next year’s elections, with maps still up in the air until the 2018 elections or even those in 2020—the last before the decennial redistricting that follows every national census. “This is the first time since the 1960s that there’s been so much litigation this late into a decade,” says Jeffrey Wice, a former Democratic National Committee lawyer who’s now a research fellow at SUNY Buffalo Law School.

State legislatures control redistricting in most states. Whichever party holds the majority during the session following the national census has an advantage when it comes to setting boundaries, which are supposed to track changes in population. The same

night Republicans took back the U.S. House in 2010, they seized 20 state legislative chambers from Democrats. Among them were both the state House and Senate in Alabama, where Democrats had ruled since Reconstruction.

The Republican victories made this decade’s fights particularly contentious. Lawsuits were filed in 42 states challenging borders drawn after the 2010 census, and courts agreed to review boundaries in 22 of them. Many of the suits were filed by groups claiming the new maps favored the GOP by packing minority voters into a handful of districts, creating a small number that are overwhelmingly Democratic and a larger number that are disproportionately white and comfortably Republican, in violation of the Voting Rights Act of 1965.

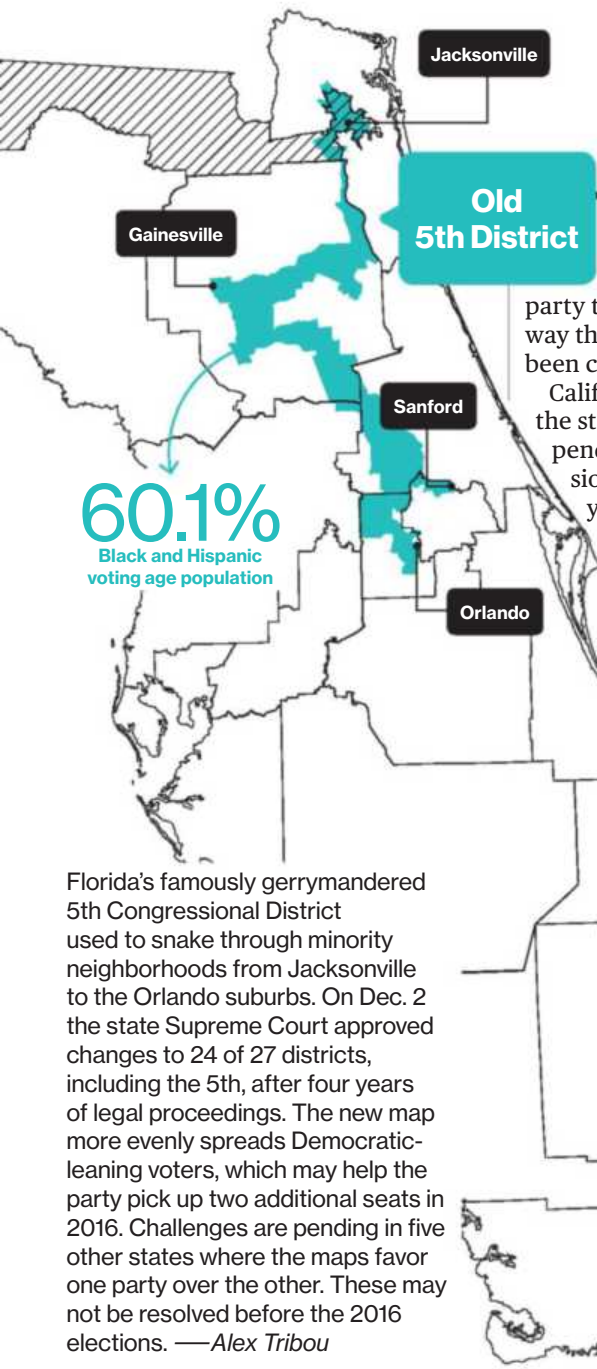
“This legislature went all out, and they wrote the worst redistricting plan we’ve seen since the 19th century,” says the Reverend William Barber, president of North Carolina’s NAACP chapter, who’s suing to remake the map in that state. The current boundaries, which have helped Republicans win four North Carolina congressional seats previously held by Democrats

since they went into effect, have been upheld by multiple courts. “I’m not sure why they continue to press the issue,” says state Senator Bob Rucho, who oversaw the change. “We followed the letter of the law.”

Edward Blum, a visiting fellow at the American Enterprise Institute, says there would be even more litigation if not for the U.S. Supreme Court’s 2013 decision in the *Shelby County v. Holder* case, which struck down a section of the Voting Rights Act that restricted states with histories of voter discrimination from making changes to district maps or election law without prior approval from the U.S. Department of Justice. The decision puts the onus on plaintiffs to sue, raising the cost of lodging a challenge. “That law will no longer provide a source of mischief that we have had in the past,” says Blum, an architect of the *Shelby County* case.

On Dec. 8 the high court heard arguments in a Texas case in which conservatives challenged the practice of apportioning state legislative districts based on the distribution of the general population, rather than considering only eligible voters. A decision for the plaintiffs could reshape the meaning of “one person, one vote” in congressional districts, too. If that happens, “the court will be inviting an avalanche of redistricting challenges unlike anything we’ve seen before,” says Janai Nelson, associate director-counsel of the NAACP

Both parties are looking to capture control of redistricting after the 2020 elections



Legal Defense and Educational Fund. "It will provide a basis for nearly any disgruntled party to suggest that there is another way that the population should have been counted."

California and Ohio are among the states that have created independent, nonpartisan commissions to oversee redistricting. "If you're the Republican majority in North Carolina, you might want to say, 'Let's both agree to a fair process that will allow us to compete on an even playing field,' rather than betting the farm," says Miles Rapoport, president of Common Cause, a nonprofit watchdog group that's advocated for the creation of commissions across the country.

Letting the partisan process continue unchecked, he says, will only result in an endless cycle of tit-for-tat every time a party regains control of drawing new maps. "Especially in states where people feel they have been victimized by an unfair process, what goes around comes around," Rapoport says. "Revenge is sweet."

The national Democratic Party is already looking ahead to state elections in 2020. Presidential election years are generally more favorable to Democrats than midterms, when the electorate tends to favor Republicans. In 2014 the Democratic Party unveiled its Advantage 2020 initiative, which is focused on winning statehouses before the next round of redistricting. "The path to a Democratic majority in the U.S. House in the next decade is through state legislatures," says Carolyn Fiddler, national communications director for the Democratic

Legislative Campaign Committee.

Before then, even Florida's redrawn map might be upended. The boundaries, commissioned by Common Cause and the League of Women Voters, have been challenged by Representative Corrine Brown, a Democrat whose district will become less African American under the plan approved by the state Supreme Court. Says Rick Hasen, a professor of law and political science at the University of California at Irvine's law school: "As long as there are somewhat murky legal standards, as there are in this area, and as long as people are politically active and motivated, we're going to see disputes." —Josh Eidelson

The bottom line Courts are considering legal challenges to electoral maps in five states that may not be resolved before the 2016 election.

Budgets

The Hidden Cost of High Unemployment

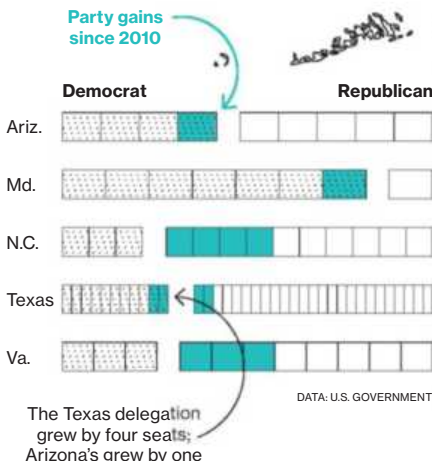
► States pay billions in interest on loans to cover jobless claims

► "This is money that we should not be paying out"

Amid the economic collapse of 2008 and 2009, the spike in people claiming unemployment benefits forced 35 states to borrow from the federal government to cover payouts from their state jobless funds. States have borrowed \$134.5 billion to pay unemployment claims since the end of 2007, when the last recession began, according to the U.S. Department of Labor. That's generated \$3.7 billion in interest for Uncle Sam since 2011, when a provision in the 2009 stimulus law suspending interest payments expired.

While most states have found ways to retire the debt, three still haven't: California, Connecticut, and Ohio. California's debt is the highest, at \$6 billion. Under federal law, employers are on the hook to pay back the principal through higher unemployment

U.S. House delegations



◀ taxes. In many states, including Connecticut, employers are also expected to cover the accrued interest.

California has so far covered \$1.3 billion in interest payments out of its general fund. Employers in the state have sent Washington more than \$1.8 billion. Without benefit cuts, they'll be responsible for covering the rest of the payments, which

\$6

billion

California's debt to the federal government for loans to cover unemployment benefits

are projected to keep paying at least through 2018. "It's a burden," says Marti Fisher of California's Chamber of Commerce.

Ohio's outstanding balance is \$775 million. Employers have

paid \$962 million in additional taxes, and the state covered \$246 million in interest, according to the Ohio Department of Job and Family Services. "This is money that we should not be paying out," says Ginny Grome of **Restaurant Management** in Cincinnati, which owns 65 Arby's restaurants in seven states. The company has paid almost \$218,000 in extra taxes because of Ohio's outstanding loan. "That's a lot of money as far as reinvesting" or hiring more staff, she says.

In Connecticut, employers have paid \$504 million in extra taxes and \$85 million in interest, an overall rate more than four times higher than in neighboring Massachusetts, which took out \$1.5 billion in federal loans but paid it back before any interest was charged. Connecticut expects to pay off its \$101 million balance next year, says Carl Guzzardi of the state's Department of Labor.

Colorado, Illinois, Michigan, and five other states issued bonds or borrowed from other funds to retire their federal debt. Others raised employer taxes and reduced benefits. In November, Indiana advanced funds to retire its \$250 million debt and save businesses \$327 million next year. "Hoosier businesses and employees can now rest assured that this tax on hiring has been eliminated," Governor Mike Pence, a Republican, said in a Nov. 10 release.

Only 17 states have sufficient cushions built into their unemployment insurance funds to get through another

downturn without borrowing from the federal government again, according to the Labor Department. Lawmakers in Ohio are taking steps to prevent a shortfall, introducing legislation that would raise taxes on employers until an adequate reserve is met. The bill would also reduce unemployment benefits and require drug testing to determine eligibility in some cases.

The Ohio AFL-CIO opposes the measure because it "unfairly puts the burden of reform on the backs of the unemployed while employers will pay less overall," President Tim Burga said in a statement. State Representative Barbara Sears, a Republican who sponsored the bill, says the time to bolster the fund is now, while unemployment is falling and the economy is improving. "Do we want to go into the next recession prepared to the best of our ability?" she asked at a Nov. 10 hearing in Columbus. "Or do we want to go into the next recession ill-prepared and take the full brunt of the hit long after the recession is over?" —*Mark Niquette*

The bottom line States have paid the federal government \$3.7 billion in interest for loans to cover unemployment benefits since 2011.

Elections

Uber Has an Army At Its Fingertips



▶ **The ridesharing app shifts from lobbying to mobilizing voters**

▶ **"They are excited to contribute to the political process"**

New **Uber** customers who signed up in Texas on Nov. 3 got an unusual bonus from the ridesharing company: a free lift to and from the polls. The offer, timed to coincide with state elections, was advertised with the

promotion code TexasVotes. "We want you to think about what's important to you, not how you're going to get to and from your local polling place," the company said on its blog.

Uber offered a similar deal in Canada in October during national parliamentary elections. The promotions mark a shift for the company—which in 2014 hired David Plouffe, a former adviser to President Obama, to oversee its political strategy—from lobbying elected officials to encouraging its growing base of drivers and customers to vote. "Uber has become such a critical part of people's lives that they are excited to contribute to the political process," says spokesman Justin Kintz.

Uber has long used its app as a tool for asking customers to call or e-mail local elected officials about regulatory proposals that affect the company. In September it successfully employed this tactic to block tougher insurance requirements and background checks for Uber and other ridesharing companies in Palm Beach County, Fla. "Uber was brilliant in motivating and activating their users," says Melissa McKinlay, a Palm Beach County commissioner whose office was flooded with e-mails and calls asking her to oppose the proposed rules.

Gabriel Lenz was in Hawaii earlier this year when he got an alert via his Uber app to sign a petition against proposed state legislation tightening regulations for ridesharing services. "That's a much better way of reaching people than anything that campaigns would ever have," says Lenz, an associate professor of political science at the University of California at Berkeley. "If a campaign sends you a postcard telling you to turn out to vote, on average that will have a zero effect on your behavior."

Uber has faced opposition from established taxi and livery services, which say Uber undercuts the market by sidestepping regulations designed to increase safety. "For their size, they have immense amounts of regulatory battles," says Arun Sundararajan, a professor at New York University's business school who studies the sharing economy.

In San Jose, California's third-largest city, lawmakers in November backed away from a proposal that would have required fingerprinting of Uber

drivers—just like taxi drivers. Instead, after Uber urged local riders to e-mail the city council, San Jose instituted random curbside fingerprint checks. “It’s a compromise that I’m far from happy with,” says San Jose Mayor Sam Liccardo. “It’s hardly surprising that an industry that relies on a mobile app to engage customers would use that same mobile app for advocacy.”

When New York Mayor Bill de Blasio announced plans this year to cap Uber’s fleet, the company added a “de Blasio” tab on its app that showed a map void of its familiar car icons, with wait times of 25 minutes or more—the outcome of the mayor’s proposed policy change, according to Uber. The app prompted riders to tweet their opposition; 18,623 people did. An additional 49,239 people sent e-mails to the mayor, who dropped the proposal in July. “It’s easy for many public officials to look at a big company and not listen to the message that’s being developed by the company,” says Uber spokesman Kintz. “When they hear that message from tens of thousands of people in their community, that’s when they really start to pay attention.”

The company has a corporate policy of not contributing to political campaigns or endorsing candidates. But in October, Uber blasted e-mails to riders in Seattle—where the city council is considering allowing the company’s drivers to unionize—urging customers to register to vote in order to influence “how the Council manages the ridesharing options you depend on.” More than 5,000 people complied, according to Uber.

The company won’t say how many people it ferried to the polls in Texas and Canada or whether it plans to roll out similar offers during next year’s presidential election. “They are turning the common practice of giving voters a ride to the polls into a marketing tool,” says Joseph Fishkin, a law professor at the University of Texas at Austin. “This is a company that’s hoping to get new customers out of it, so that’s creative.” —*Alison Vekshin*

The bottom line Uber is using e-mail and even free rides to the polls to get its customers involved in politics.

A Bill

By Catherine Boudreau, Josh Wingrove, and Jen Skerritt

Where’s the Beef (From)?

H.R. 2393 Country of Origin Labeling Amendments Act of 2015



1. Starting in 2002, Congress began passing legislation requiring imported beef, pork, and other food products to carry labels stating their country of origin. In May the World Trade Organization determined that the labeling rules violate global trade regulations by creating a burden for imported meat that doesn’t apply to domestic producers. In June, facing the threat of retaliatory tariffs, the House voted to repeal the labeling requirements for beef, chicken, and pork.

2. Democrats in the Senate, citing consumers’ right to know where their food comes from, have resisted overturning the labeling system. On Dec. 7 a WTO arbitration panel said it would allow Canada and Mexico to impose up to \$1.01 billion in tariffs annually—beginning as soon as Dec. 18—until the U.S. changes the law. The Canadian government has threatened to impose sanctions on livestock, as well as chocolate, ketchup, pasta, potatoes, and wine, if the Senate fails to act.

3. Republicans in the Senate may fold repeal language into the 2016 omnibus appropriations bill to avoid jeopardizing cross-border trade. “We must prevent retaliation,” Kansas Senator Pat Roberts, chair of the Agriculture Committee, said in a statement. “And we must do it now before these sanctions take effect.”



Sponsor
Michael Conaway (R-Texas)
Co-sponsors
Jim Costa (D-Calif.)
David Rouzer (R-N.C.)

Canadian
Prime Minister
Justin Trudeau

And 80 others

Section 1
Short Title
p. 2

Section 2
Repeal of country
of origin labeling
requirements for
beef, pork, and
chicken
pp. 2-4



Te Yuletemps

► It's getting tougher for Amazon to meet holiday-season demand

► "They would have to build an entire different infrastructure"

The day before Thanksgiving, Nam Paan dressed for his job interview in a black hooded sweatshirt and matching sweatpants. The 24-year-old walked into a hotel near the Seattle-Tacoma International Airport, and one hour and proof of ID later, he had a gig at an **Amazon.com** warehouse. The \$12.35 an hour will help pay for his machining classes at a nearby technical college.

Paan is among the 100,000-plus people Amazon says it's adding to its workforce during this holiday shopping season, roughly doubling its warehouse head count. Outposts such as the hotel serve as temporary recruiting centers for people willing to spend a few weeks a year moving items from shelves to boxes in grueling shifts. As Amazon's overall business has grown—fourth-quarter revenue is expected to rise 23 percent this year, to \$36 billion—so has its reliance on these feeder systems. The company used 80,000 seasonal workers last year, up from 70,000 in 2013 and 50,000 the year before.

Amazon's demand for temps is starting to test the limits of the supply. That means more money for workers and the staffing agencies that technically employ many of them: Amazon is paying more than double what it paid for warehouse temps in 2012, wage data from researcher IbisWorld suggest, while its projected revenue is up 69 percent. Temps' wages have outpaced inflation, increasing 2.6 percent a year in that time. IbisWorld says they'll rise 3.4 percent a year for the next three years.

Amazon will "just have to deal with higher pay rates, which can squeeze profit margins," says Michelle Hovanetz, an IbisWorld analyst. Partly because of uncertain labor expenditures, the company's projected range for its fourth-quarter profit is extremely broad, anywhere from \$80 million to \$1.3 billion, vs. \$214 million last year. Amazon declined to comment.

The heavy lifting for recruiting falls to Amazon contractors such as **Integrity Staffing Solutions**, which hired Paan and supplies short-term labor for Amazon in at least 15 states. The temp agencies handle background checks, tax filings, and legal issues, including injuries and unemployment claims. "If Amazon is going to do this themselves, they would have to build an entire different infrastructure," says Robert Capo Jr., a former manager for Integrity, based in Newark, Del.

SMX and Kelly Services also send Amazon thousands of seasonal workers each year, but Integrity got in earlier. The company, founded in 1997, landed its first contract with Amazon that year. "We did things others weren't willing to do," Chief Executive Officer Todd Bavol told a local radio station earlier this year. Financial details are scarce, but Bavol told the *Philadelphia Business Journal* in 2009 that the company's annual revenue was \$84 million and would

be \$300 million by 2014. Integrity declined to comment for this story.

While the other staffing companies' finances are similarly opaque, executives at TrueBlue, which owns SMX, said last year a contract to staff a single Amazon-size warehouse is worth \$2 million to \$3 million a year. This year some temp agencies have begun handing workers a \$500 signing bonus. "Stuff Your Pockets With Cash," reads a Thanksgiving-themed poster advertising jobs with SMX in Newark, Calif.

This industry of middlemen provides huge savings for Amazon and other companies with heavy holiday labor needs, such as **United Parcel Service** and **FedEx**. That's because the payroll taxes that businesses cough up for unemployment insurance can range widely depending on how often an employer lays people off. The government doesn't factor in temps, so companies like Integrity take the tax hit, letting Amazon base its rates only on the 90,000 permanent staff at its 70 U.S. warehouses and shipping hubs.

The difference in taxes paid per worker is minuscule, but the total is about \$100 million a year for a company Amazon's size, based on an analysis by Bloomberg using unemployment insurance rate ranges in 28 states where Amazon has warehouses. Until it can build robots with the dexterity to efficiently pick items off a shelf, it's worth it to Amazon to keep seasonally hiring and firing through third parties. "They are only using workers





Should Apple be worried about a SmartWatch? 32

Up-and-coming African game designers gather in Lagos 32

Innovation: The foam battery riding to your phone's rescue 34

exactly when they need them," says Susan Houseman, senior economist with the W.E. Upjohn Institute for Employment Research, a researcher that administers unemployment programs.

Conditions aren't great. Many seasonal workers endlessly circle warehouses as large as several football fields, with handheld scanners directing them to their next item and ticking down the seconds each task should take. The challenging conditions have drawn criticism from labor advocates for years. In 2013 a temp working in an Amazon warehouse in New Jersey was crushed to death in a package-sorting conveyor system.

Temps tend to have fewer labor protections than full-timers, and the problem is growing as they account for 2.1 percent of the U.S. workforce—an all-time high, according to the Department of Labor. Companies like Amazon "are institutionalizing a permanent tier of temporary workers," says Erin Hatton, a sociology professor at the University of Buffalo. Dave Clark, Amazon's senior vice president for operations and customer service, told Bloomberg TV in a Nov. 30 interview that temps are paid market rates and have a chance at full-time jobs.

At the Seattle-Tacoma airport hotel,

Integrity's new recruits had varying expectations. A landscaper wanted to supplement his income during the winter. A woman who recently lost her janitorial job said she hoped the company would hire her full time. A father of three, unhappy with his gig as a press operator for a packaging supplier, was looking to climb Amazon's ranks to a management position. Some, hired on the spot, began working the next day, while most of the country was sitting down for Thanksgiving dinner. —Adam Satariano and Spencer Soper

The bottom line Amazon's boom year means a swell in temps, which cuts into profit—though not as much as putting them on staff would.

Cybersecurity

Stop, or We'll Tell Your Parents

► U.K. police are stepping up their house calls to teen hackers

► The PSA campaign tag line: "Cyber crime wrecks lives"

It was a summer morning, officer Paul Hastings recalls, when he arrived at a suspected hacker's house in the northern English city of Hull. There, police had tracked one of the people who'd signed up online for a hacking service called Lizard Stresser that was used to attack companies including **Microsoft**, **Amazon.com**, and **Sony** at the end of 2014. This particularly fearsome cyber-vigilante was asleep when Hastings knocked, so his dad answered the door.

The visit was one of about 50 U.K. police made this year to people they say used the Lizard Stresser site, many of them children. The Hull suspect, a

teenager, couldn't have done anything wrong, his dad told Hastings. He spent all his time upstairs, on his computer.

Hastings is part of the Prevent team at the cybercrime unit of the U.K. National Crime Agency (NCA). The eight-person team tries to scare offenders on the "periphery of cybercrime" about the consequences of online misdeeds before they commit a jailable offense, boss Richard Jones says. Often, that means talking to teenagers. On Nov. 25, U.K. police arrested an 18-year-old from Wales in connection with the hack of Internet provider **TalkTalk**, which told customers in October that about 20,000 bank account numbers had been compromised. It estimates associated costs of £35 million (\$53 million). Police have arrested four other teens across the U.K. in connection with TalkTalk's breach, though none of the five has been charged or identified.

Teen hackers have been pop culture figures since Matthew Broderick starred in *WarGames*, and the U.K. has a long history with juvenile black hats. In 1994, when U.S. Air Force researchers found an unauthorized user on their systems downloading data, they tracked the hacker to a North London suburb. Working with London police, they found their culprit: a 16-year-old boy in an attic bedroom, as journalist Gordon Corera recounts in *Intercept: The Secret History of Computers and Spies*.

In 2011 hacktivist group LulzSec accessed Sony servers, posted fake news stories on News Corp. websites, and intercepted FBI communications from a private contractor's computer system. Two of the four members arrested in the U.K. and the U.S. that year were 18 or younger when the attacks took place. The NCA team began its cease-and-desist visits last year and says it's made 150 house calls in 2015.

Teen hacker subcultures can be an opportunity for law enforcement, says Robert Schifreen, one of the first people in Britain to be prosecuted for cybercrime. Charged with forgery for hacking Prince Philip's e-mails in 1985, Schifreen was acquitted in 1987—an appeals court said existing laws couldn't cover what he did. He went on to found IT firm **SecuritySmart** and ►

The Weekly Price of Amazon's Holiday Help

$\$47.8\text{m} + 19.4\text{m} + 3.2\text{m} = \70.4m

Salaries of temp workers (paid through staffing firms)

Expenses of staffing firms

Fees charged by staffing firms

Total paid to staffing firms each week during peak season

◀ now works for Brighton University. “There are a lot of hugely knowledgeable, obsessive, skilled, curious young people out there who want to find out just how far they can push technology,” Schifreen says. “Spelling out to these kids just how far they can go, while remaining on the right side of the law, makes a lot of sense.”

The young hackers Jones sees come from a wide range of backgrounds, he says, but share an acuity for problem-solving. Praise from online hacking communities is a natural draw, says Grainne Kirwan, a psychology lecturer at the Institute of Art, Design and Technology in Dún Laoghaire, Ireland. The suspect in Hull, roused from bed, didn’t make eye contact while Hastings outlined the allegations against him, the officer says. But he hasn’t come to the police’s attention since, and the Prevent team calls that a success.

The NCA is also targeting teens and their parents with an ad campaign that began running in U.K. movie theaters on Dec. 8. The dramatization shows two parents in their living room boasting about their computer genius son and his inexplicably large bank account. It cuts to two NCA officers in a police interview room, with the tag line “Cyber crime wrecks lives.” The hard sell won’t work on some kids, Jones acknowledges. “Those,” he says, “are the type of individuals we will try to arrest and prosecute.” —Kit Chellel

The bottom line The U.K.’s National Crime Agency is trying to scare young hackers straight with door-knocks and ad campaigns.

Intellectual Property

Building an Arsenal of Smartwatch Smarts

▶ **Swatch’s boss has been cool to the idea but is stockpiling patents**

▶ **“People are trying to put too much in there”**

Ever since smartwatches started hitting the market, **Swatch Group** Chief Executive Officer Nick Hayek has downplayed their importance, dismissing even **Apple’s** offering as “not a milestone” and saying the devices pose no

threat. But he’s not taking any chances.

Swatch has filed 173 U.S. and international patent applications related to smart- and connected watches in recent years, most of them since 2012, according to Envision IP, a patent law firm in Raleigh, N.C. While aggressive patent filing is an essential protective strategy in the hyperlitigious technology industry, Envision says Swatch is laying the foundation for a potential lineup of smartwatches. The Swiss company has “developed and patented watch circuitry and hardware that will allow them to introduce their own branded smartwatch without having to partner with telecoms and handset makers,”

173

The number of patents Swatch has filed for smart- and connected watches in the U.S. and abroad, most since 2012

says Maulin Shah, Envision’s managing attorney.

The epicenter of Swatch’s patent efforts is a subsidiary called Ingénieurs Conseils en Brevets, or Patent Consulting Engineers. From offices along

a stone-arched arcade in the medieval Swiss town of Neuchâtel, lawyers manage the intellectual property developed by Swatch’s legions of researchers for timepieces ranging from \$50 Flik Flaks to \$5,000 Omega Seamasters to the \$50,000-plus Breguet Classique Hora Mundi. A patent published in March is for a smart battery that allows data transmission. One from May is for a radio-frequency signal receiver. And one from October, naming Hayek as the inventor, is described as a “portable object for detecting presence of apparatus by wireless communication circuit.”

The company declined to say what any of the patents are for or to make Hayek or other inventors available for this article. Swatch says its patent unit filed a record number of applications in 2014, with a goal of protecting its innovations, gathering market intelligence, and fighting counterfeiting. In the past, Hayek has had little positive to say about smartwatches, criticizing them for their short battery life—typically 24 hours or less—and features that are easier to use on smartphones. The Apple Watch, while “the nicest” on the market, breaks no new ground with its design, Hayek said in March. “People are trying to put too much in there ▶ **34**



Nigeria

Software Game On

Hundreds of guests poured into the Pinefield Schools auditorium in Lagos for the second annual West African Gaming Expo, a showcase for software created in the region and hardware built elsewhere. Adedoyin Ogundoyin, the founder of local online gaming marketplace **AfricGames.com**, says he organized the expo on a budget of \$5,000 to demonstrate to sponsors—including **Google**, local bank **GTBank**, and the U.K.'s Bournemouth University—that the region's developers deserve more



investment. The coders' projects, and the attention and financing they attract, also show students, parents, and schools that games can be more than silly distractions, Ogundoyin says. Some of the young developers

who presented at the expo in the last days of October took home Google Cardboard and other merchandise from the sponsors. —Caroline Tompkins, with photography by Ima Mfon



▲ A gamer mom offers her daughter a glimpse of VR on a headset lent to the expo by Oculus Rift.

► Children participate in a Mortal Kombat X tournament, organized by local arcade owners. Other tournaments featured one of FIFA's soccer video games and the fighting game Tekken.

◀ A Microsoft Kinect captures players' moves during a dance-off.

15

Developers who presented products at the gaming expo

\$5k

Budget put up by Google and others

\$75k

Amount organizers are trying to raise for a larger venue and bigger prizes next year

Innovation

Superbattery

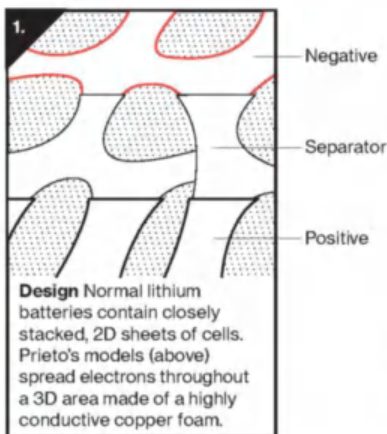
Form and function

Lithium ion batteries get a bit more efficient every year, but they aren't keeping pace with the demands of mobile devices, electric cars, or the grid. More flexible designs can be at least twice as powerful as current ones.

Innovator Amy Prieto

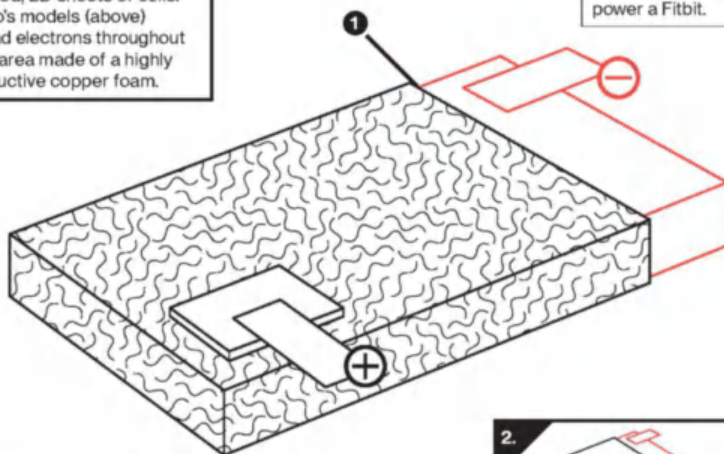
Age 41

Chief executive officer of nine-employee Prieto Battery in Fort Collins, Colo.



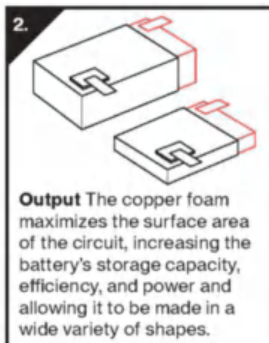
Origin Prieto, who has a Ph.D. in inorganic chemistry from the University of California at Berkeley, developed her design at Colorado State and formed her company in 2009.

Uses The company says it'll be able to make batteries big enough to store grid-scale solar energy and small enough to power a Fitbit.



Stats The company is working on a battery that can be charged in as little as five minutes and run at high power for as long as 10 hours.

Funding Prieto has received an undisclosed amount from Intel's venture capital arm, and it's trying to raise an additional \$3 million.



Next Steps

"Battery life continues to be a significant pain point for mobile users," and Prieto's model is a step forward, says Wendell Brooks, president of Intel Capital. Prieto says it plans to bring the batteries to market within two years and is in talks with manufacturers. The company's also licensing its copper-foam-based technology to other companies. —Ian King

◀ that a phone can already do," he said.

Swatch hasn't entirely sat out the shift toward smartwatches, though it eschews that label. Since 1999 it's offered touchscreen timepieces such as the \$1,250 Tissot T-Touch Expert Solar watch, which has a compass, can track altitude, and runs on solar power. And Swatch is developing mobile payment capabilities for watches based on technology similar to that in touch-enabled bank cards. The company says early next year it will introduce a \$90 watch called the Bellamy that can be used to make electronic payments at stores. Alessandro Migliorini, an analyst at Mirabaud Securities in Geneva, says the company is hedging its bets while waiting to see whether smartwatches take off. "Swatch will experiment with different functionalities, and if there is demand, they will then push more aggressively," Migliorini says.

Swatch has been burned by earlier forays into new technologies. Hayek has said the company still has unsold models of a 1991 pager that flopped and of the Paparazzi, a watch it made with Microsoft about a decade ago that could receive messages and stock quotes. But he also knows the risks of falling behind trends and the importance of protecting intellectual property. Hayek's father, Nicolas, formed Swatch in 1983 by merging two struggling Swiss watchmakers. Although the technology for quartz timepieces was developed in Switzerland, Japanese companies had been more successful in commercializing the new watches. The senior Hayek countered with funky, multicolored designs that captured the public's imagination and secured Swatch's fortunes. The company is now valued at about \$19 billion. "The quartz crisis is in the background of everything they do," says Jon Cox, an analyst at brokerage Kepler Cheuvreux in Zurich. "It probably leaves a bit of a scar on them, and that's something in the back of their minds when they have technology: Patent first, ask questions later."

—Hugo Miller, with Corinne Gretler and Susan Decker

The bottom line Swatch has filed smartwatch-related patents in recent years, even though CEO Hayek has been dismissive of the devices.

B Edited by Jeff Muskus
Bloomberg.com



Play my "Friday Night" playlist.

What album is this?

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December 14 — December 20, 2015

Insuring the Toys Of the Wealthy

► Writing policies for the possessions of the 1 Percent is a \$40 billion business

► “We see everything from traditional art to the world’s largest collection of shrunken heads”



Filled with oil paintings, watercolors, and other artworks, the offices of **Privilege Underwriters Reciprocal Exchange** (PURE) in White Plains, N.Y., look like a Manhattan gallery—that’s been through a storm. “We have a water-stained Salvador Dali, we have an ancient Chinese plate that is cracked and reframed in a box,” says Ross Buchmueller, the insurer’s chief executive officer. “And obviously we have this glass structure that greets everybody when they come in,” he adds, referring to a 5-foot sculpture with a crack in it that the company got from a client after paying his claim for its full value. “We have now installed damaged art throughout the building,” Buchmueller says. “It’s a constant reminder for why we are in business.”

PURE specializes in insuring the mansions of the ultrarich and their contents, a niche that is expanding rapidly as the ranks of U.S. billionaires swell. The company has about

50,000 policyholders; revenue from premiums has climbed 40 percent or more annually since its founding in 2006 and will come close to \$500 million this year. Almost all its policyholders buy homeowners insurance, more than 80 percent also buy excess liability coverage, and about 75 percent pay extra to insure collections of art, wine, and other items. The business isn’t only about possessions: This year, PURE formed a partnership with **Concentric Advisors**, a cybersecurity firm run by a former Scotland Yard official, to help protect policyholders from hackers, identity theft, and breaches of financial data and embarrassing information.

Insuring emblems of wealth is a \$40 billion business, says Evan Greenberg, CEO of **Ace**, the industry leader in the U.S. The overall property and casualty business generates almost \$600 billion in annual premiums. Still, insurers like the luxury



business because few collectibles are ever stolen or damaged and clients are willing to pay a lot to protect them, a combination that keeps profit margins high. Policyholders also take very good care of their prized possessions, says Buchmueller, who helped launch **AIG**’s private client group before leaving to start PURE.

The market keeps getting bigger. The wealth of the richest people in North America is expected to balloon to \$62.5 trillion in 2019, from \$50.8 trillion last year, says Boston Consulting Group. Next year the top 1 percent will hold more than half of the world’s wealth, according to Oxfam International. “The 1 Percenters have done pretty well in life, and they have a lot of toys to insure,” says Cliff Gallant, an analyst at Nomura Holdings who covers the insurance industry.

Although premium levels vary, PURE says insuring fine art valued at \$1 million might cost \$1,000 a year, ►

◀ and covering the same amount of jewelry might run about \$8,000, because the jewelry is more likely to be lost or stolen. AIG has begun insuring clothing, shoes, and handbags, charging about \$5,000 a year to cover clothing valued at \$1 million. “We see everything from traditional art to the world’s largest collection of shrunken

\$500

million

The revenue
PURE expects
to get from
premiums in 2015

heads,” says Jerry Hourihan, who runs AIG’s private client business. The latter is hard to value, he adds, “because you can’t find a new collection of shrunken heads.” He declined to provide details to

protect the owner’s privacy.

Ace’s July agreement to buy Chubb for \$28.3 billion will triple Ace’s high-net-worth annual premiums to \$4.6 billion, giving it 12 percent of the U.S. market, according to Bloomberg Intelligence. AIG’s private client unit took in about \$1.5 billion this year in premiums and insures about 40 percent of billionaires in the U.S., Hourihan says. PURE plans to focus on the U.S. AIG and Ace are targeting places such as Dubai, China, and India. **Cincinnati Financial** and **Nationwide Mutual Insurance** also have announced plans to boost offerings for the wealthy.

At AIG, Buchmueller helped secure a contract with a firefighting team in California, allowing the company to offer a private emergency crew to deploy in neighborhoods prone to wildfires. Wealthier clients “like to build homes where the wind blows, where there are wildfires, where the earth shakes,” says Kelley Beach of insurance broker **Marsh & McLennan**.

AIG also has a former America’s Cup sailor on staff to advise yacht owners. When a 65-foot Viking Sportfish valued at \$2.5 million was stolen from a Palm Beach (Fla.) marina in 2010, it took only a few hours to retrieve the boat. The search was helped by AIG’s connections with authorities and filling stations along the coast and in the Caribbean. The insurer hired a plane to search for the yellow-hulled ship and had a legal team on the ground to obtain warrants to secure it.

Donald Kirson buys insurance from PURE for the six-figure collection of duck decoys he keeps at his farm in Glyndon, Md. Kirson, who retired after selling his medical equipment business in 1998, has been buying decoys for about 12 years, traveling the U.S. to find them. He’s never had one stolen, and the wooden carvings rarely break. He lends out pieces only to local museums so he doesn’t have to ship them.

Most recently, Kirson spent about \$175,000 to buy a piece carved in 1880 in Cobb Island, Va.—a rare item because the region was devastated by a hurricane in 1902, he says. “It’s got movement, it looks real, it just talks to you,” he says. “Beautiful form, old paint. It’s got shot marks in it because it was hunted over. It’s everything you would want in a decoy.” That kind of passion makes for ideal policyholders, Buchmueller says: “From an insurer’s perspective, you can only dream of people who care that much.”

—Sonali Basak

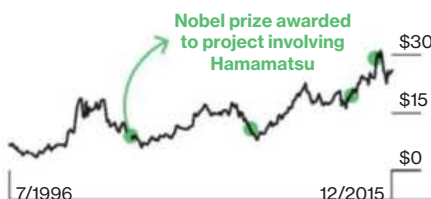
The bottom line PURE’s business covering homes and possessions of the ultrarich has been growing at least 40 percent a year since 2006.

Stocks

Winning Nobels and Delighting Investors

▶ **Hamamatsu’s sensors help solve the mysteries of the universe**

▶ **The company’s stock price**



When employees at **Hamamatsu Photonics** found out their high-precision light sensors had helped win this year’s Nobel Prize in physics, they did nothing to mark the occasion—after all, it was the fourth time the company’s products had contributed to Nobel-winning physics research. “The next day was the same as usual” after the prize was announced



Neutrino observatory

in October, says Akira Hiruma, president of Hamamatsu, which is in the Japanese city of the same name. “There was no special celebration.”

Hamamatsu shareholders, however, have plenty of reason to celebrate. The company has turned a profit every year since it listed shares on the Tokyo Stock Exchange in 1996, including a record 16.6 billion yen (\$137 million) in the 12 months ended in September. Its operating profit forecast of 23.2 billion yen for this year “looks conservative and could yield some upside,” according to SMBC Nikko Securities. Hamamatsu’s stock has more than quadrupled since early 2009, giving the company a market value of 538 billion yen.

Hamamatsu’s route to Nobel success started three decades ago in an abandoned zinc mine about 200 miles west of Tokyo, where scientists set up an underground laboratory to research cosmic rays. In a set of experiments they called KamiokaNDE, a complex detector made with about 1,000 of Hamamatsu’s photon-detecting photo-multiplier tubes was placed deep in the mountain and filled with thousands of tons of water. The instrument was the first to detect cosmic neutrinos, a particularly difficult particle to observe, and helped University of Tokyo scientist Masatoshi Koshiba win the Nobel Prize in physics in 2002.

The 2008 Nobel-winning project used the company’s sensors to investigate a part of subatomic physics called broken symmetry. The 2013 prize was given to François Englert and Peter Higgs after the world’s largest particle accelerator used Hamamatsu’s photo-multipliers to confirm the existence of the Higgs boson, which gives mass to other particles. Hamamatsu made more than 11,000 improved sensors for 2015 Nobel winner Takaaki Kajita’s experiments. His research, which began in 1996, found that neutrinos oscillate and have mass.



Hamamatsu has a 90 percent global market share in photomultipliers, which look like lightbulbs. Sales to academic researchers represent only 5 percent of the total. The majority of revenue comes from medical and industrial applications. In X-ray machines, the multipliers check exposure time or dose. Pollution monitors employ them to observe the content of car exhaust fumes. They're even used in drilling for oil wells to determine the density of rock.

President Hiruma, a graduate of Rutgers University, is taking the long view when it comes to increasing profitability. While many Japanese companies are cutting back investment, Hamamatsu is hunting for opportunities to increase returns via more capital spending. Hiruma says he's interested in research on dark matter, a hitherto invisible part of the universe that he sees as a candidate for future Nobel prize-winning research. "We have this word in Hamamatsu, *yaramaika*," he says. "It means 'Let's do it.' It's the spirit of just giving something a go. You can calculate the risk of doing something to some extent. But there's also the risk of not getting future business opportunities if you don't." —Tom Redmond and Toshiro Hasegawa

The bottom line With 90 percent of the market for photomultipliers, Hamamatsu has earned a profit every year since it went public in 1996.

Finance

It's Safe to Be a Banker in Ireland Again

► The industry's reputation recovers from the 2008 collapse

► "Not as glamorous as it was, but it's seen as a viable career option"

Reviled during Ireland's financial crisis, banking is back in vogue for the country's young and ambitious. More students are seeking careers in finance, with Trinity College Dublin spending €70 million (\$77 million) on a new



Passive Revolution

U.S. investors have poured **\$365** billion into low-cost index mutual funds and exchange-traded funds so far this

year.¹ Actively managed funds, which are among Wall Street brokerages' best customers, have

seen **\$147** billion walk out the door. Vanguard² has been the big winner, taking in **\$185** billion, bringing its total assets to

\$3.1 trillion.³ This year alone, the company has effectively reduced the financial industry's fee income by **\$16** billion.⁴



Vanguard is on pace to add \$1 trillion in assets every few years, effectively funneling money from the financial industry to investors.⁵

—Eric Balchunas

Markets/Finance

¹ While index funds and ETFs have been gaining ground, actively managed funds still have

70%

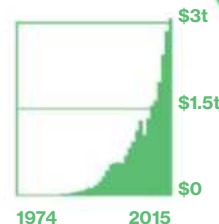
of the

\$16t

in total investor assets.

² Vanguard has a mutual ownership structure, which means it's owned by the people who invest in its funds. The company's profits go to investors in the form of lower fees.

³ Vanguard's assets under management



39

⁴ The average active mutual fund charges an annual management fee of 0.66 percent, which is

0.53

percentage points higher than Vanguard's average of 0.13 percent. Applied to the \$3.1 trillion in assets, that difference saves Vanguard investors \$16 billion a year.

⁵ Other mutual fund companies suffer from the so-called Vanguard effect, which forces them to lower their fees to remain competitive.

◀ business school to meet rising demand and University College Dublin reporting a 10 percent increase in applications for finance-related courses over the past four years. **Allied Irish Banks** said in November that it will restart its college recruitment program, and **Bank of Ireland** plans to expand its program to 2008 levels next year.

While people in Greece and Poland focused their anger on politicians during the European debt crisis, Irish ire was aimed more at the financial industry, which was left crippled from lending to property developers and needed €64 billion of taxpayer money for a bailout. Bankers were spit at, egged, threatened, and vilified for bringing on the worst banking crisis in the euro region. Yet many young people aren't deterred. "You have to be responsible for yourself and your own career, rather than listening to people ask why you want to be a banker," says Jamie Hennessy, 25, who started studying finance in 2008 just as the debacle began.

About 62,000 people work in finance in Ireland, from back-office clerks to top executives, according to the latest figures from the government's statistics office. Although that's up from the beginning of the year, it's still 10 percent below the peak in 2009. Along with newcomers, finance veterans from other countries are arriving in Dublin. "The perception of Ireland was of a small economy that had overheated and imploded," says Alan Werlau, an American in his 50s who moved to Dublin a month ago to work as a strategist at **Davy**, the country's largest securities firm, after stints on Wall Street. "I was amazed at the speed of the recovery in Ireland. The reaction from friends and family in the U.S. was amazingly positive. No one said, 'Are you crazy?' Only Irish people asked that."

Financial companies including **Citigroup** and quantitative trading firm **Susquehanna International Group** have operations in Dublin, on the banks of the River Liffey. In all, about 35,000 people work for international financial companies, and the government is aiming to add 10,000 jobs in the industry within five years. "We have come through to the other side now," says Andrew Burke, who heads the

"I was amazed at the speed of recovery in Ireland. The reaction from friends and family in the U.S. was amazingly positive. No one said, 'Are you crazy?' Only Irish people asked that"

business school at Trinity. "If anything, internationally it's seen as a plus to have transformed from an economic crash to high economic growth.

Banking is probably still not as glamorous as it was, but it's seen as a viable career option."

The Bank of Ireland got more than 2,000 applications from college graduates and hired about 100 this year, it says. The starting salary is about €28,000. Hennessy, who joined the bank's graduate training program in 2014, recalls that in 2008 worries about the consequences of the unfolding crisis "certainly crossed my mind," but "I was convinced that if I wanted it enough, I would be good enough to find something." She adds: "I'm definitely going to stay in finance." —*Dara Doyle*

The bottom line As Ireland's economy recovers, the government wants to add 10,000 jobs in the financial industry in five years.

Defaults

Debt Is Job One for the New Argentine Leader

► **The president has to appease creditors to boost the economy**

► **"If Macri doesn't get this done, he can't do anything"**

There was no mystery about the top item on newly elected Argentine President **Mauricio Macri**'s to-do list as he prepared to take office on Dec. 10: make peace with the nation's disgruntled creditors.

Macri, the center-right former mayor of Buenos Aires, won the presidency on Nov. 22, pledging to revive South America's second-biggest economy. Among the problems: a recession, rampant inflation, a growing deficit, and falling foreign reserves. To address any of those challenges, he'll have to resolve a 14-year-old

standoff with U.S. hedge funds holding defaulted Argentine bonds, an impasse that's made the nation a pariah in international credit markets. A settlement with holdout creditors offers the only path for Argentina to borrow the money it needs to repair the economy and finance development. "If Macri doesn't get this done, he can't do anything," says Alberto Bernal, chief emerging-markets and global strategist at XP Securities.

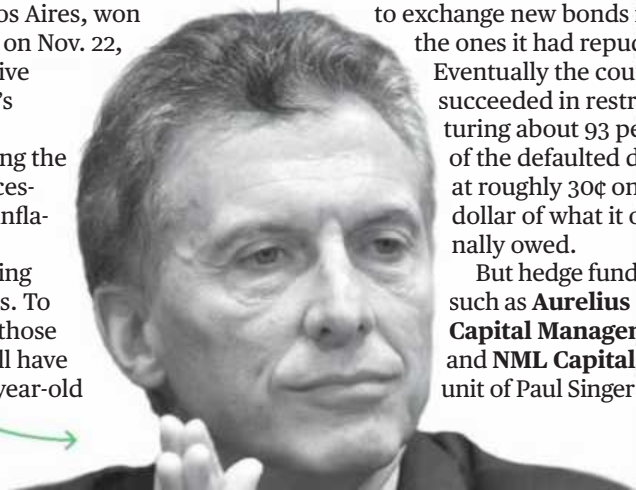
The incoming finance secretary, Luis Caputo, has told the court-appointed mediator that the government wants to begin settlement negotiations with the holdouts promptly. But to reach a deal, Macri has to overcome legal, political, and economic hurdles, many of them set up by his Peronist predecessors: Cristina Fernández de Kirchner, who demonized the hedge funds as "vultures," and Néstor Kirchner, her late husband, who served as president from May 2003 to December 2007. Macri will have to go to Congress to undo laws limiting the government's freedom to make a deal. He'll have to make things right with holders of Argentina's restructured debt, which the country stopped paying in 2014. And he may have to issue tens of billions of dollars in new debt to finance a settlement. A lawyer representing the government declined to comment.

Argentina defaulted on \$95 billion in foreign debt at the end of 2001. After talks with creditors stalled, the nation faced lawsuits from bondholders seeking payment in federal court in New York, where a clause in the bond contracts allowed most of them to sue. Judge Thomas Griesa found in favor of the creditors, routinely handing out money judgments that the bondholders unsuccessfully struggled to enforce. In 2005 and 2010, Argentina offered

to exchange new bonds for the ones it had repudiated.

Eventually the country succeeded in restructuring about 93 percent of the defaulted debt at roughly 30¢ on each dollar of what it originally owed.

But hedge funds such as **Aurelius Capital Management** and **NML Capital**, a unit of Paul Singer's



Elliott Management, bet they could get a better deal. A legal breakthrough came in 2012, when Griesa sided with the hedge funds and ruled that Argentina can't make any new payments on the restructured debt before it pays an estimated \$1.8 billion to a group of holdouts including NML. A spokesman for Elliott declined to comment.

Unwilling to pay and unable to find a way around Griesa's rulings, Argentina began defaulting on about \$30 billion of restructured debt in July 2014. In October, Griesa extended his ruling to the holders of an additional \$6.1 billion in defaulted debt, increasing the pressure on Argentina to settle.

For Macri, the political hurdle may be the most difficult one. He'll need Congress, where his party is in the minority, to repeal the law prohibiting officials from giving the holdouts better terms than were offered in the 2005 and 2010 debt swaps. To sell a deal domestically, he'll have to overcome years of the Kirchners' harsh rhetoric portraying the vulture funds as a threat to Argentina's sovereignty and dignity.

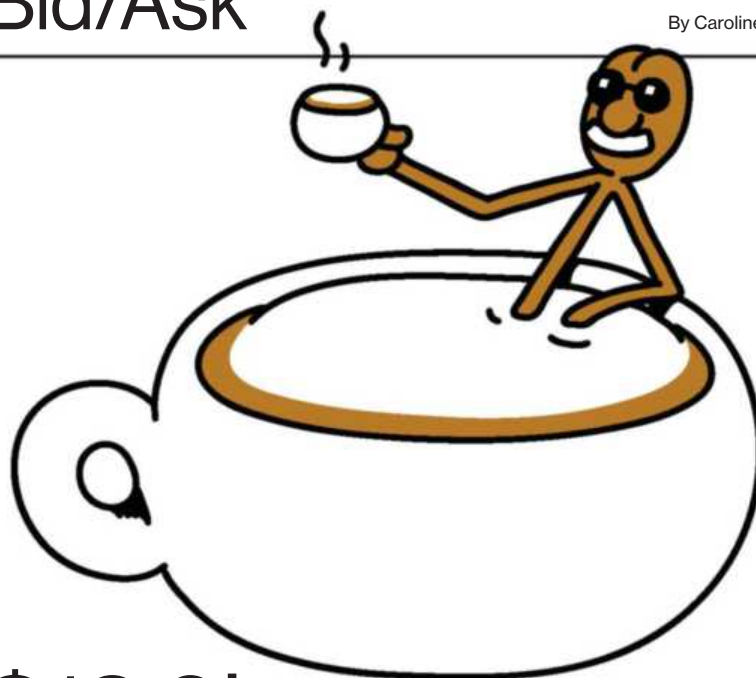
Macri will also have to establish credibility in U.S. courts, where an appeals panel last year called Argentina "a uniquely recalcitrant debtor." Daniel Chodos, an emerging-markets strategist at Credit Suisse Group, estimates Argentina will have to issue as much as \$20 billion in debt to pay the holdouts and make back payments on the restructured debt. A deal could come in the first half of 2016, he says, and it will have to be structured in a way that avoids flooding the market with new Argentine bonds.

Griesa, who has frequently urged both sides to find a solution, may help push along a settlement by freeing the restructured bond payments once Macri gets most of the holdouts on board. Investors have driven up the prices of Argentine bonds by more than 5 percent in the past three months, betting that Macri will achieve a settlement. They've got one very good reason: He doesn't have any real alternative. —*Bob Van Voris and Katia Porzecanski*

The bottom line Unresolved disputes stemming from Argentina's \$95 billion default could handcuff the new president's economic plans.

Bid/Ask

By Caroline Winter



\$13.9b

JAB Holding snaps up Keurig Green Mountain. The Luxembourg-based company that manages the fortune of Austria's billionaire Reimann family is expanding its coffee empire. The group has spent more than \$30 billion in the past four years acquiring companies including D.E. Master Blenders 1753, Mondeléz International, and Peet's Coffee & Tea, which also owns Stumptown Coffee Roasters and Intelligentsia Coffee.

\$7b



Postal Savings Bank of China prepares to go public. The lender sold about 17 percent to institutional investors in advance of a planned initial public offering.

\$2.9b

A hotel giant grows. Accor, Europe's biggest hotel operator, agreed to buy FRHI, which owns Fairmont, Raffles, and Swissôtel, from a group including Qatar Investment Authority.

\$2.46b

Fairchild Semiconductor International gets an unsolicited offer. A group led by China Resources Holdings and Hua Capital Management topped a November bid from ON Semiconductor.

\$2.4b

France's CMA CGM purchases a Singapore shipping line. The No.3 container shipping line is buying Neptune Orient Lines to secure stronger Asian and U.S. routes.

\$2b

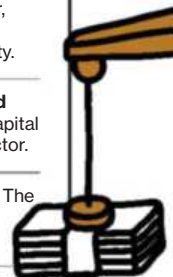
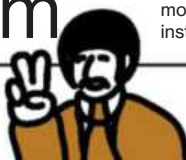
Blackstone buys 32 multifamily properties. The buildings, being sold by Greystar Real Estate Partners, are spread across the country and will bring Blackstone's portfolio to 57,000 units.

\$863m

Manny, Moe, Jack—and Carl. Billionaire investor Carl Icahn offered 3.3 percent more than Bridgestone for Pep Boys, the Philadelphia-based auto-parts chain.

\$9.2m

Ringo Starr cashes in. The Beatles drummer auctioned off more than 1,300 personal items, including clothing, jewelry, and instruments. One drum kit fetched \$2.1 million.



THE BEST DRIVERS, BAR NONE

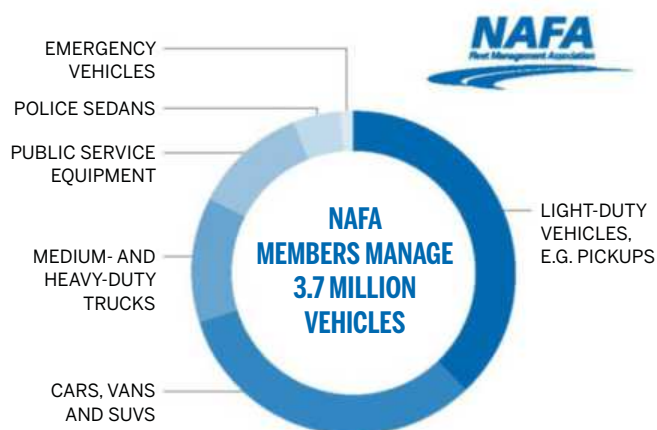
CERTIFICATION PROGRAMS GEARED TOWARD THE NEXT GENERATION KEEP THE FLEET INDUSTRY IN GOOD HANDS

AS THE ECONOMY PERKS UP, and the nation's corporations and municipalities put more wheels on the road to handle improving sales and services, the NAFA Fleet Management Association is intent on improving the abilities of the industry to handle future challenges.

"In the next 10 years, the impact of new vehicle technologies—driverless vehicles, Big Data, onboard diagnostics—will become major issues for us," says NAFA CEO Phillip E. Russo. "Attitudes to mobility are also changing. With services like Uber, and a greater emphasis on public transport, the millennial generation is changing the dynamics of how people travel. And then, of course, there are alternative fuel and sustainability issues. All of these issues affect our members, and we need to stay on top of them."

It's why the Princeton, N.J.-based association, which represents workers running both corporate and public service vehicle fleets, and whose membership has been growing at 2 to 3 percent over the past five years, is raising the profile of its Certified Automotive Fleet Manager education program. NAFA has already partnered with four colleges, including Ferris State University (FSU) in Michigan and Ranken Technical College in St. Louis, and is in negotiations with 14 more, to run CAFM certification programs as part of their accredited degree courses.

A MASSIVE FLEET



"There's not a great deal of awareness of fleet management as a rewarding, well-paid career," Russo notes. "So, as well as raising the level of overall expertise in the industry, we're hoping that by putting ourselves in front of the 18 to 22-year-old college demographic, we can recruit a talented new generation of fleet managers."

Reaching out to a younger demographic is also important because, as Patrick T. Barrett, Chair of NAFA's Education Development Committee, points out, the majority of fleet managers in the country are approaching retirement age. "I am going to turn 60 soon, and that's the average age of fleet managers out there," he explains. "The reality is that there's likely going to be a major shortage of professional managers in the coming years."

To complete NAFA's fleet management program, students take written exams in eight topic areas that include asset management, risk management and vehicle fuel management. As the certification program celebrates its 30th anniversary, NAFA says program participation has been growing at a steady 25 percent, year-over-year, since 2012.

Also, in an effort to broaden the reach of its educational mandate, the association has started independent certification programs in each of the eight topic areas in the CAFM curriculum, geared to people already working in the industry who want to catch up on particular topics, and especially to other professionals who need to know how an organization's fleet operation affects their roles.

"We unbundled the study areas of the CAFM certification into independent courses because other businesspeople wanted access to what we can provide: the most trusted fleet education in the industry," Russo says. "Now, professionals outside of fleet—in positions such as HR, risk management and procurement—can take a single course and get a certificate of completion in that area of interest."

Because being aware of best practices can drive efficiencies and save organizations money, continuing to raise industry standards in these post-recessionary times is more important than ever. "Knowing about fuel management when you're running a fleet of vehicles, each doing maybe 30,000 miles annually, is your biggest opportunity to create savings," Russo explains.

"We've been in existence since 1957, and we've made it our business to know what impacts running a fleet," he adds. "That's why we're in the best position to educate people coming into the industry, so they can make the best decisions for their employers."

— John O'Mahony

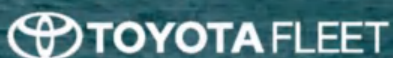
A NO-BRAINER THAT'LL HAVE YOU
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MAGNET**

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VALUATION**

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☐ **PROOF IT WORKS**



Holmes (left) with
Theranos researchers
in Palo Alto

THERANOS CEO ELIZABETH HOLMES TRIES TO TAKE HER COMPANY OUT OF THE CROSSHAIRS

BY SHEELAH KOLHATKAR
AND CAROLINE CHEN
PHOTOGRAPH BY
BENJAMIN RASMUSSEN

Elizabeth Holmes rarely slips out of character. When she responds to questions in an interview or on a conference stage, she leans forward, leg crossed ankle over knee in a half-lotus manspread power pose. She lowers her voice an octave or two, as if she's plumbing the depths of the human vocal cord. Although she hates it being remarked upon, her clothing, a disciplined all-black ensemble of flat shoes, slacks, turtleneck, and blazer buttoned at the waist, is impossible not to notice. She adopted this uniform, as she calls it, in 2003, when she founded Theranos, a company seeking to revolutionize the medical diagnostics industry by doing tests using only a few drops of blood.

"I wanted the focus to be on my work," she says slowly and deliberately. "I don't want to go into a meeting and have people looking at what I'm wearing. I want them listening to what I'm saying. And I want them to be looking at what we do." She pauses, then adds, "Because when you walk into the room and you're a 19-year-old girl, people interact with you in a certain way."

All the same, Holmes says, she wasn't prepared for how eager people would be to tear her down. "Until what happened in the last four weeks, I didn't understand what it means to be a woman in this space," she says, shaking her head. "Every article starting with, 'A young woman.' Right? Someone came up to me the other day, and they were like, 'I have never read an article about Mark Zuckerberg that starts with 'A young man.'"

Holmes, now 31, is sitting in her office. The surfaces are curved and gleaming, and the giant, orblike light fixtures seem to have been taken from the *Starship Enterprise* as reimagined by Jean Nouvel. The windows offer panoramic views of the flora of Palo Alto, where Holmes has become one of the most obsessed-over entrepreneurs in Silicon Valley. Partly this is a result of her ambition to make getting a blood test as fast and as simple as checking your bank account balance. If Theranos succeeds, Holmes says, anyone, anywhere, could have access to information about their

health and risk of disease anytime they want, without a prescription. Theranos does that, she says, with as little as a finger prick's worth of blood, a much smaller amount than traditional blood tests, and at a fraction of the cost. Theranos charges from \$2.67 for a glucose test to \$59.95 for a range of sexually transmitted diseases and posts all of its prices online, a level of transparency no traditional lab company matches. Holmes says her company can conduct reliable testing for 50 percent to 80 percent less than Medicare reimbursement rates, which could lead to astonishing cost savings. She estimates that \$2.2 billion would be saved each year in Arizona alone, where the company has a presence in 40 Walgreens pharmacies.

The Theranos story has also been amplified by its \$9 billion valuation, based on its venture capital funding, as well as by the roster of powerful board members (Henry Kissinger, William Perry) and public supporters (Marc Andreessen, among others) Holmes has gathered around her. But Holmes herself is as much a source of fascination as her company. She has just the right mixture of boldness and precocity that Silicon Valley loves. She was only too willing to let that propel her through the business media's star chamber, though she refused to let photographers use a wind machine to blow her hair.

On a typical day, Holmes would be overseeing Theranos's 1,000 or so employees, but on this afternoon in late November she's under siege. In her office, she's joined by Theranos's general counsel and a newly retained public-relations crisis expert who monitors every tic and utterance. An aide silently enters the room and hands Holmes a cup of green liquid, which contains coconut water and kale, along with other organic extractions. Stacks of paperwork, test data, and U.S. Food and Drug Administration applications sit on the table in front of her, all intended to prove that Theranos's products work as she says they do.

After several years of Holmes telling the largely unchallenged story of how Theranos intends to change the world, a blast of cold air came on Oct. 15, when the *Wall Street Journal* published the result of a five-month investigation by

John Carreyrou. The piece reported that as of the end of 2014, Theranos wasn't using its own products and technology to analyze most of the tests it was conducting for consumers. Former employees, the article further reported, claimed Theranos was cheating on routine proficiency tests, which help federal regulators determine if a particular lab is producing accurate results. The implication was that Theranos's technology was largely a charade. A series of similarly critical articles followed. Bloomberg News reported that some Theranos partners that had signed deals with the company, including AmeriHealth Caritas and Intermountain Healthcare, hadn't actually started using the technology yet. The bright-eyed woman the media had clambered over themselves to mythologize was now being picked apart.

On its website, Theranos denied the accusations, then went about trying to find people who could come to its defense. "Here's what happens every time I have a huge winner," says Tim

"IF IT DOES NOT WORK CAN WE TWEAK IT UNTIL IT DOES WORK? ... THERE ARE MILLIONS OF PEOPLE OUT THERE WHO NEED THIS TO WORK"

Draper, founding partner of venture capital firm DFJ and a Holmes loyalist whose \$1 million investment made Theranos's incubation possible. "The first thing that happens is that the competition sort of pooh-poohs it. Then the next thing that happens is they go, 'Uh-oh, this is threatening our business.' ... She's opened the kimono, and it's scaring the pants off the competition."

To the entrenched members of the

lab testing industry, Theranos's plans sound like an existential threat, and perhaps an absurd proposition. Critics and skeptics have been coming forward, suggesting that what the company says it's doing is impossible—or, just as bad, that what it's doing right now isn't that different from its old-school competitors. The story may have resonated beyond the medical world because the stakes feel huge, much bigger than the success of one company. The tech industry is in the midst of another boom or bubble, depending on whom you ask. If Theranos, one of the hottest businesses around, isn't quite what it says it is and venture capitalists are potentially out hundreds of millions of dollars, it stands to reason that other companies are overvalued, too.

The solution, Holmes says, is less talk and more action that proves the company can back up all its claims. "What we need to do now is focus on the technology and focus on the science and the data and put that out there," she says. "Because that speaks for itself."

Theranos's "nanotainer" is the most obviously different component of its technology. It's a tiny vial about the size of a firefly that collects a few drops of blood from the prick of a fingertip. Theranos has said that from those minuscule samples it can test for hundreds of diseases and conditions. The company also makes an extra-small needle that goes into a person's arm in a more conventional fashion, although it draws a smaller amount of blood than traditional needles. Finally, it makes the Theranos sample processing unit, or TSPU, a black machine about the size of a printer that acts as a multipurpose blood analyzer. Samples obtained by either method are dropped into a cartridge that goes into a slot in the TSPU like a VHS tape into a player. The cartridge contains software programmed to run the desired test—for pregnancy hormones, blood sugar, potassium levels, whatever the patient wants—using the company's own chemical processes. Or at least that's the idea.

The potential for this to change health care is significant. Holmes cites the example of premature babies in hospital neonatal intensive care units, who have to have blood drawn for routine tests every day. Because the babies are so small, she says, sometimes fitting into the palm of one hand, taking multiple vials of blood from them means they need constant transfusions. Running the tests using only a few droplets would save some of the most vulnerable people on earth from a great deal of trauma.

BOIES: ANDY KROPA/INVISION/AP PHOTO; KOVACEVICH: MICHAEL MALONE/VSAN FRANCISCO CHRONICLE; POLARIS: ROUGHHEAD: COURTESY; U.S. NAVY: STANLEY B. MIRABOL; SIPA USA: FRIST: COURTESY; U.S. SENATE: SHULTZ: ANDREW HARRER/BLOOMBERG; FOEGE: HUMANSPIHERE; NUNN: SCOTT OLSON/GETTY IMAGES; BECHTEL: EVAN LOU/AP PHOTO; MATTIS: COURTESY U.S. CENTRAL COMMAND; COSGROVE: COURTESY CLEVELAND CLINIC; PERRY: COURTESY; STANFORD: KISSINGER: ANTHONY BEHAR/SIPA USA; ROBERTSON: COURTESY STANFORD; ANDREESSEN: KIMBERLY WHITE/GETTY IMAGES

Theranos's low prices could possibly transform the way medical care is approached altogether, according to at least one doctor who's looked at the company closely. Dr. Waldo Concepcion, the chief of clinical transplantation surgery at Stanford University Medical Center, spends most of his time performing kidney transplants on children, a procedure he believes is often preventable. If many of the patients he sees had learned they were at risk of renal failure earlier, they could have changed their diet and lifestyle and avoided ending up on his operating table as teenagers. Theranos's promise of low-cost testing, he says, would open doors to low-income patients.

"We can't focus with the dollars we have in health care just on diseases," he says. Concepcion, who's just signed on as medical consultant for Theranos, had thrown a tweed jacket on over his scrubs and raced from the hospital to Theranos's offices to make his point. "We have to focus on preventive health. We spend all of the money at the top of the pyramid, when we need to focus it down here," he says, drawing a triangle in the air in front of him.

Of all the advisers *Bloomberg Businessweek* interviewed, Concepcion was the most candid in saying the tests' accuracy isn't yet guaranteed. Based on the data he's seen, though, he says he's "encouraged" that the technology is feasible. The first step is, "Does it work?" he says. "And if it does not work, can we tweak it until it does work?"

He's working with the company to set up a real-world academic study, comparing finger-prick tests against traditional venous draws in hospitals, to prove "once and for all" that the technology fulfills its promises. If it isn't perfect, he says, the solution isn't to pile on Theranos. It just means the company needs to work harder. He adds: "There are millions of people out there who need this to work."

Theranos first entered the public consciousness in 2013, when it announced a partnership with Walgreens. Before that, Holmes and her company had been working away for 10 years, hiring scientists and building prototypes, almost entirely in secret. Competitive paranoia reigns in most technology industries,

and as a private company, there was no reason for Theranos to advertise what it was doing or how it was doing it. Once the company settled on a plan to sell testing directly to consumers, it had to put itself out there and become a brand that patients would recognize. The company lobbied the Arizona State Legislature to make it legal for individuals to order lab tests without a prescription. Theranos started introducing its "wellness centers" inside Phoenix-area Walgreens stores, where patients can get tests done, with or without a doctor's order.

The idea, Holmes says, is for the experience of having a blood test to be "wonderful," rather than like visiting a medieval torture chamber. The centers feature high-definition video screens that play undulating concentric patterns that can also be seen on display around Theranos headquarters. "In mathematics there's a term called the golden ratio," Holmes says, explaining that it can be

found in seashells and tree trunks or da Vinci's *Vitruvian Man*. "That ratio is the foundation of our logo, which is the circle, which is the simplest form of what's called the flower of life."

Eventually, the company and its backers hope to bring the Theranos concept to the rest of the country. "When you're getting your blood test, it needs to be cool," she says. "We're in the retail business. People need to be able to go in and have an experience and be like, 'That was awesome.'"

But Theranos isn't running a restaurant or providing taxi rides. It's providing a medical service, and a good customer experience alone isn't going to make the company viable. It has to work with the FDA, which is trying to increase its oversight of the medical testing industry. Even by the federal government's bureaucratic standards, regulation in the business has been complex and inconsistent.

Most blood work in the U.S. is run on analyzer machines made by companies such as Siemens, Roche

FANBOYS

■ = BOARD MEMBER
■ = INVESTOR
□ = PUBLIC SUPPORTER



DAVID BOIES
Chairman of Boies,
Schiller & Flexner,
former counsel to Al Gore



RICHARD KOVACEVICH
Former CEO of
Wells Fargo



GARY ROUGHHEAD
Retired U.S. Navy
admiral, board member
of Northrop Grumman



LARRY ELLISON
Oracle executive
chairman, billionaire,
investor



DR. WILLIAM FRIST
Former Senate majority
leader, heart and lung
transplant surgeon



GEORGE SHULTZ
Secretary of State for
Reagan, Secretary of
the Treasury for Nixon



WILLIAM FOEGE
Epidemiologist, former
director of the CDC



DONALD LUCAS
Venture capitalist



SAM NUNN
Former senator,
current CEO of Nuclear
Threat Initiative



RILEY BECHTEL
Billionaire,
chairman of the board
of Bechtel Group



JAMES MATTIS
Retired Marine Corps
general



DR. DELOS COSGROVE
CEO of the Cleveland
Clinic



WILLIAM PERRY
Secretary of Defense
under Clinton



HENRY KISSINGER
Secretary of State,
winner of the Nobel
Peace Prize



CHANNING ROBERTSON
Emeritus Stanford
professor, now a
Theranos adviser



MARC ANDREESSEN
Founder of VC firm
Andreessen Horowitz

Diagnostics, and Olympus. The labs that buy these machines don't need the FDA's OK to use them, but the manufacturers need it to sell them. Siemens and the others are required to submit data to the agency showing that the tests running on the machines are safe and accurate.

Theranos has had certification from the Centers for Medicare and Medicaid Services to operate its labs since 2011. Because it wasn't selling its devices or any other equipment to third parties, the company technically didn't need FDA approval for its tests. Holmes says she wanted to seek it anyway, because she considers the FDA's to be the "gold standard" of regulatory approvals. Theranos submitted its first test, for herpes, to the FDA in 2013, and it was cleared this past July.

In the meantime, the FDA has determined that the nanotainer is a Class II medical device, meaning it must be cleared if Theranos wants to use it with any test other than the herpes test, according to the agency. The company says it's submitted data that show test results on blood collected from fingertips into the nanotainer are the same as those obtained with larger samples taken through a vein. While the company waits for the FDA to clear the nanotainer, it has stopped doing finger-prick draws for all its customers, except for those getting only the herpes test, because the FDA had approved the use of the nanotainer for that specific use.

The FDA doesn't consider the analyzer, or TSPU, to be an element that needs to be approved on its own. But if Theranos submits a test to the agency for clearance, the TSPU, as a component of the test, will be reviewed in the process. "Theranos has cleared one test, HSV1, [aka herpes] for use with the TSPU," FDA spokesman Eric Pahon confirms. "If other tests subject to premarket review were intended to be used with the TSPU, additional clearance or approval would be required."

The FDA has recently said it wants to regulate so-called laboratory-developed tests, but that isn't a policy yet. Theranos says it's voluntarily submitting 120 applications for individual tests that run on its analyzer.

All of this puts Theranos in an awkward situation. The company has to show that it's using its own technology somehow—the whole promise of Theranos's multibillion-dollar valuation is that its technology is exponentially cheaper and easier to use than that of existing players, and not just for one herpes test. On the other hand, if Holmes wants to hold her

company to the FDA's higher standards, as she claims, that means waiting for federal clearance on all of its tests before using them. While Theranos works its way through this transition period, it is unclear whether the company is running any tests on its own machines at all.

Holmes refuses to answer the question. When asked if Theranos is actually running any patient samples on its own analyzers today, as opposed to devices made by Siemens or another manufacturer, she will only say, "We can run them on our analyzer, but it depends on the test order."

A few days later, when she's asked again, her response is still noncommittal: "Depending on the order, it can happen on the TSPU, with our chemistries, and it can happen on conventional machines, just using traditional venous draw." It can. But is it? She points out that other labs don't publish such information, which is true. But then, other labs don't usually declare themselves medical revolutionaries.

FDA clearance alone may not be enough to convince physicians that the tests can be used for all patients, according to John Ioannidis, a professor of medicine at Stanford who's

increased focus on diagnostic tests is welcome, the agency has less experience in reviewing tests than drugs, he says, and its applications don't give as many details as doctors would like to see.

To Ioannidis, only a peer-reviewed journal article that lays out the full methodology and inner workings of the Theranos technology can answer these questions in a satisfactory manner. The company has said it hasn't done this, so far, out of concerns that its proprietary technology could be copied by competitors. Ioannidis responds by saying, "This is what patents are for. They should make sure they have patent protections. We need to have evidence in the scientific literature to scrutinize what they do."

Other experts echo his point. "Typically companies will show their product at a professional meeting, talk about it, their scientist will present

data. Theranos has chosen not to do that, which in my mind is dubious," says David Koch, president of the American Association for Clinical Chemistry and a professor at Emory University. "That's why a number of us scientists in the field are skeptical. Why be so secretive about it? If it works,

tell the world and we'll use it."

Again, Theranos isn't the only diagnostic company to provide scant details on its technology. "The process has been suboptimal across the industry, but now I think we're at the crossroads," Ioannidis says. "Theranos caught my attention early on because they had such vibrant media stories. Other companies just don't make such claims. Today it's Theranos. Tomorrow it may be another company." He adds: "If you get the wrong test result, you could go down a path that could really destroy your life."

Holmes says the company's era of secrecy is over, and it's inviting outsiders, including reporters, to try the tests for themselves. (For the record, the finger prick feels like a finger prick.) In December, she says, a group of independent medical experts will spend two days in Theranos's lab to examine the technology, the data, and the regulatory filings, and can then talk publicly about what they found. The Cleveland Clinic is running a study comparing Theranos's results with traditional blood draws

The half-inch-tall nanotainer



The TSPU blood analyzer

best known for his criticism of the way scientific research is conducted, in particular for a 2005 paper titled "Why Most Published Research Findings Are False." In February he authored an opinion piece in the *Journal of the American Medical Association* questioning Theranos's lack of published data.

When it comes to "tests that may be more complicated, the level of reporting for FDA clearance won't be enough," says Ioannidis. While the FDA's

and will publish the findings. Holmes is also putting together a medical advisory board that will bring more scientific and regulatory expertise. She says Theranos is preparing “manuscripts” containing the testing data that’s been submitted to the FDA, which it plans to publish in a medical journal (she won’t say when or which journal). Its main competitors, Quest and LabCorp, have done no such thing, she points out.

According to Holmes, all the recent negative attention has acted as free advertising, and walk-ins at Theranos’s wellness centers in Arizona are up. “I mean, is it incredibly painful to see people say this kind of stuff about us? Of

in. She soon impressed him. “I think there are people who are the Mozarts and the Beethovens and the Newtons, the Lavoisiers and the Einsteins and the da Vincis, who come along rarely in a generational sense,” he says. “These people who become scientists and artists and musicians, I think, possess a very special capability. It was becoming more and more clear to me that she had it. I was in the presence of somebody who was unlike anything that I had seen before.” Other members of the Elizabeth Holmes fan club include David Boies, the acclaimed lawyer; former Senate Majority Leader William Frist; and former Secretary of State George Shultz, all of whom are on Theranos’s board.

As scores of articles have recounted, Holmes dropped out of college in her sophomore year to file her patent and start her company with two former members of Robertson’s lab. Robertson became Theranos’s adviser and helped her raise money.

Draper, the venture capitalist and early Theranos investor, says he’s known Holmes since she was 6 years old and a friend of his daughter. When she decided to start her company, she approached him. He called her parents to make sure they were OK

with her plan to drop out of school. Then he gave her \$1 million.

Holmes, brainy as she is, lacked formal scientific training. She made up for it with her messianic passion and ability to persuade people to join her cause. “We needed really good chemists. We needed really good biologists. We needed really good enzymologists, really good biochemists,” Robertson says. “I mean, it was sort of like *Ocean’s 11*. I would call some of my buddies that I’d worked with in previous companies and drag them down out of the hills and say, ‘You know, let’s try one more time.’”

Despite the current controversies around Theranos, Robertson stands by his former student. “She’s as astute as she ever was. She’s as charming as she ever was,” he says. “She is one of the sweetest people I know.” He declined to comment on the company’s marketing claims or business model, saying he was never involved on the business side of things. But he vigorously refuted

any allegations that Theranos’s tests may be inaccurate.

“On the precision and accuracy issue, that is our holy grail,” he says. “We would have to be certifiable, you know, to go out and put out a product that people’s lives are going to depend on. That’s not who we are.”

While Draper isn’t a board member or official adviser, he says he sees Holmes frequently. He’s puzzled by Theranos’s troubles and wasn’t aware the company isn’t currently using its famed nanotainer for anything but a herpes test. The idea of pausing the relentless push forward to wait for fusty government approvals doesn’t seem to make sense to one of the investors in Twitter and Skype. “So they’re going to have to go through each one of those tests before they can even use the nanotainer?” he says, sounding horrified. “You can run tests; you just say they are not FDA-approved,” Draper continues, referring to the nanotainer. “If that’s not the way it’s happening, I’m definitely going to give Elizabeth a call about this.” He pauses the interview to pull out his phone.

“I would think they can still use the nanotainer and just have some wording,” he says, typing out a text message to Holmes. “I would think you just put a little warning label on the thing and say the FDA has not agreed to the accuracy of these things.”

Another adviser and board member, Richard Kovacevich, a former CEO of Wells Fargo, says some of the bumps Theranos has encountered are specific to private companies, which aren’t usually prepared to deal with such intense public criticism. Responding to a situation like this, “you need speed, you need evidence, it’s a full-court press,” he says. Theranos “doesn’t have the infrastructure to respond, in a way, and so that probably led people to think, ‘Oh God, there must be some truth to this.’ It’s been behind, in my opinion, up until lately, in refuting the allegations and not focusing on test results.”

Holmes vows to keep up the fight. She decided when she was a teenager that she was willing to sacrifice everything for her calling. She has no personal life to speak of. She doesn’t watch movies or read books. She used to run but mostly gave it up. When she started her company, she says, she researched diet and nutrition and monitored her blood chemistry. She determined that a vegan, macrobiotic lifestyle would allow her to “train” her body to work all the time and to function on very little sleep, like an android. “After a while you just get so deep into it,” she says. “In the normal sense, I could take a vacation, but this is where I want to be.” **B**

“WHY BE SO ~~SECRETIVE~~ ABOUT IT? IF IT WORKS, TELL THE WORLD AND WE’LL USE IT”

course it is,” she says. “But is it a crisis? No. We’ve built something that’s incredible, and we have now the opportunity to showcase it.”

In Silicon Valley, bankers like to call startups that surpass \$1 billion in valuation “unicorns.” Airbnb, Uber, Pinterest, Snapchat, and Zenefits all fall into the category. It’s quite possible for one of these flush startups to sustain damage and recover. Both Airbnb and Uber have weathered scandals with their unicorn-hood intact. Theranos could prove all the naysayers wrong.

Holmes certainly has plenty of true believers in her corner. From the moment she got to Stanford, in 2002, she demonstrated a talent for cultivating powerful mentors, beginning with an engineering professor named Channing Robertson. He didn’t need an undergrad, much less a freshman, working in his lab, but Holmes basically squatted outside his office until he let her

By REBECCA Greenfield

PHOTOGRAPHS BY FINLAY MACKAY

PODA

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PLSHER

How John Foley turned cycling alone at home into a status symbol



It's 9:30 on
a Thursday
morning

in July, and Candace Ryan is getting ready for her second workout of the day. Already dressed in spandex from a 6 a.m. visit to the gym, Ryan wraps her blond hair in a tight bun before clipping her white and orange spinning shoes into the stationary bike in the corner of her bedroom. For the next 45 minutes, she's in a trance, at times clenching the handlebars to pull herself over faux hills simulated by tension on the bike's wheel.

Peloton's stationary bike has be

The machine is a \$1,995 Peloton. Its frame, matte black with splashes of orange, is made of ultralight carbon steel and aluminum. Unlike the hard, chafing seats on most stationary bikes, the Peloton saddle is remarkably comfortable. The bike forgoes a chain for a rubber belt, making it almost silent. And instead of relying on friction to create the tension that simulates hills, the Peloton uses magnets. It feels like pedaling through butter. As Ryan pumps away in her reverie at her Shelter Island, N.Y., summer home, a leader board displayed on the 21.5-inch waterproof Android tablet affixed to the bike shows the progress of 81 other Peloton riders around the country, synced in a virtual pack. Three-quarters of the way through her ride, Ryan is battling for the top position with Jose59 and Battishill, the usernames of two men she's never met, who are also riding alone at home. "All right, Candace!" a disembodied woman's voice encourages from the tablet. Ryan, 41, laughs and pedals faster.

The voice is Christine D'Ercole's, an instructor leading the group from a studio in New York City. There, she's lit up on a stage like a contestant on *American Idol*. Cameras pan across the room as she shouts at her riders, who watch her through the tablets on their bikes. As everyone pushes through sprints and climbs to Ellie Goulding and the Dave Matthews Band, D'Ercole offers spacey motivations: "The only weight we need to lose is the negative thoughts in our head." A few riders are actually in the studio with her, but most are connected remotely, and D'Ercole talks to them as if there's no difference.

Ryan finishes third, trailing Jose59 and Battishill. "They came out of nowhere," she says afterward. "I don't care, as long as I'm hanging with the boys," she adds a little unconvincingly. Ryan is used to finishing at the top. She shares the Peloton bike, along with another at her home in New Jersey, with her husband, an analyst on Wall Street. Paying a flat \$39 monthly fee, she works out with Peloton around 15 times a week, logging on to as many as four classes a day. After a ride, Ryan often joins riders on the Official Peloton Rider Facebook page, a private group with more than 3,000 members, where they share stats, thank instructors for a "beautiful ride," and plan their next workout.

Thanks to die-hards such as Ryan, Peloton's stationary bike has become not just a vehicle for a grueling workout and a social networking device but the latest status symbol for the conspicuously fit. Peloton expects to make \$50 million in revenue this year and has raised \$120 million in financing, including a \$75 million round in early December, largely from private equity fund Catterton. The company says it's sold almost 20,000 bikes since January 2014. Although it has only about a third of the riders of its nearest spin-cult competitor,



SoulCycle, it earns almost half as much. SoulCycle declined to comment, citing a silent period ahead of an initial public offering that could value the startup at as much as \$900 million. But in filings, SoulCycle, which hosts its rides on-site at its branches, mentions going after the “at-home” audience, too.

Peloton, SoulCycle, and another cycling startup, Flywheel, are riding a boom in boutique fitness—chains that charge exorbitant fees for a specific type of workout, from hot yoga to barre, a ballet-inspired fitness regimen. In 2014 boutique studios made up 41 percent of industry revenue, up from 22 percent the year before. Indoor cycling is particularly in vogue, and Peloton’s classes rank among the toughest, its bike among the most coveted.

On a recent Thursday, Peloton’s co-founder, John Foley, sits in the company’s New York headquarters, a typical startup space with exposed duct work and hardwood floors. He’s wearing hot-pink Nike Pegasus sneakers and fitted jeans, and his navy polo shirt

A class at the Peloton studio in New York



is snug around his biceps, toned from regular workouts and sun-kissed. “I’m kind of an informal guy,” Foley, 44, says. “I’m not a corporate dress-in-a-suit-to-try-and-impress-people-with-my-organized-thought guy.” Later, trying to help a writer, he adds: “You can call me a douchey business guy” who’s “so poor that I can’t afford anything.” He then ignores a question to check his buzzing iPhone. “One of my investors just texted me,” he says, grinning. He shows off his iPhone’s screen, which features a picture of a bike with a sweaty towel draped over the handlebars. The caption reads: “On the bike, bitch.”

Foley got the idea for Peloton in a class at either Flywheel or SoulCycle—he can’t remember which—in 2011. As a father of two, he says he no longer had time for his favorite classes.

“When we were sans children, we found time to go to yoga, spin, and work out,” Foley says of himself and his wife, Jill, a former actress and lawyer who now runs Peloton’s retail arm. But with kids, “it becomes a lot harder to get in fitness in general, especially boutique-style fitness. It was kind of a frustrating thing, because we loved it.”

Spinning isn’t particularly convenient. You can’t simply drop into a class. Studios run on a schedule; the most popular sessions sell out within minutes. And you can’t just hop on any indoor bike. Most require special shoes with metal clips that hook into the pedals, and a class is nothing without a tailored playlist and an instructor you want to look like or date. Even so, the activity had always appealed to Foley because of its efficiency: A challenging 45-minute class burns from 400 to 600 calories, and most sessions deliver a full-body workout by including pushups on the handlebars, crunches, and even weightlifting.

After going to what he calls a “s---ty public school” in the Florida Keys, Foley work-studied his way through an engineering degree at Georgia Tech. He spent five years in operations at Mars, the candy company, before landing at Citysearch, the proto-Yelp, which eventually merged with Ticketmaster. For the next 15 years, Foley helped start various companies—Evite, Pronto, Proust—at Ticketmaster’s parent at the time, IAC. He also spent two years as president of e-commerce at Barnes & Noble before his 2011 epiphany in the saddle: People would pay to

“I used to say we want to be the Apple of fitness.”

re-create the cycling class experience at home. Foley and three co-founders, all of whom have tech backgrounds, worked on the bike's hardware and software for two years before the first unit shipped in January 2014. It was designed by Eric Villency, a kind of Jony Ive for stationary bikes, who also designed the silver or yellow bikes used in SoulCycle studios.

Instead of charging a premium for the bike, Peloton offers it at cost and makes money on subscriptions. For fitness credibility, Foley hired Marion Berrian Roaman, the grande dame of pumping it on a stationary bike. Roaman, 43, ran a cycling studio in East Hampton, N.Y., for more than 15 years before selling her business to Flywheel in 2013. She joined Peloton as the first bikes were shipping and spent a little more than a year as the chief content officer and general manager of the company's New York studio. (Roaman has since left the company. “I got them started, got the studio up and running, and it was just the right timing,” she says.)

Roaman helped recruit some of New York's best spin instructors. Peloton won't say how much it pays its instructors, but it claims to offer two to three times more than competitors and has turned its staff of 12 into fitness celebrities. (SoulCycle's instructors make upwards of \$125 for a 45-minute class.) “It's different than teaching anywhere else,” says Lisa Niren, a former Flywheel instructor who jumped to Peloton in 2014. “People always sort of look at fitness instructors, idolizing them. This is on a whole other level.” Fans have recognized Niren on the street and asked to take her picture. When she worked at Flywheel, she got Starbucks gift cards from adoring fans; at Peloton, someone gave her an Apple Watch.

“People used to go to church on Sunday—that was their weekly ritual and their community,” Foley says. “Most 25-year-olds aren't relating on that platform, but it's ‘I'll see you at the studio.’”

This year's indoor cycling may be last decade's Zumba, or Tae Bo, or Jazzercise. The crazes fall as fast as they rise. NordicTrack, the ski-inspired machine with more than \$450 million in sales at its peak in the mid-1990s, filed for bankruptcy in 1998, though the brand is still around. Even networking online while sweating has precedents, going as far back as rowers and runners logging miles into bulletin board systems via handset modems in the salad days of the Web. But social networking probably wouldn't have saved NordicTrack, and it might not guarantee Peloton's survival either.

Foley, of course, says he isn't worried that Peloton will have the half-life of a step class. “Once you discover the Peloton bike, 10 years from now, are you going to go back to the old world where you have a bike staring at the wall?” he asks. *Men's Health* this year crowned the Peloton bike the best cardio machine in its annual fitness awards—not that it mattered much to Foley. “I wasn't even excited about it, because of course it's the best cardio fitness machine in the world,” he says. “The bar is so low.”

Peloton and other cycling shops aren't selling a workout so much as a lifestyle, which devotees can purchase in the form of branded clothing, accessories, and even food. SoulCycle's online shop is extensive, offering leggings and muscle tanks with its signature skull and crossbones logo, along with backpacks, infant onesies, and the same grapefruit-scented candles that perfume SoulCycle studios.

SoulCycle took in \$112 million in

At work in the studio control room



I've stopped saying that... We're going to make Apple look small-time"

revenue in 2014. Foley says Peloton will be bigger. "We're not trying to be better than SoulCycle," he says. "We are better than SoulCycle." Peloton's demographics skew slightly older and wealthier than SoulCycle's; the average person who buys its bike is 46 and married with kids. Couples often share the bikes, which is one reason Peloton claims more riders than bikes sold. Peloton has 12 showrooms for its bikes in upper-class enclaves such as East Hampton and Newport Beach, Calif., where prospective riders can see the machine and buy branded gear.

Foley prefers to compare Peloton to consumer-product giants such as Tesla, Nest, GoPro, and Apple. Actually, not Apple. "You're going to think I'm a total douche for saying this," he says. "I used to say we want to be the Apple of fitness. I've stopped saying that. We are five times better in the category. Apple's not five times better than its competitors. We want to build the biggest consumer-products brand in the world. We're going to make Apple look small-time."

If Foley has stratospheric hopes for Peloton, some of the company's fans almost match him for zeal. Peloton's most direct line to its customers is the passionate, obsessed Facebook group, where bike owners and those considering the plunge spend their days and nights. "I'm on it [Facebook] all the time, constantly, all day," says Laura Pugerude, 48, who cycles in her home in Chantilly, Va. "Most of the time, if I pick up my phone I have notices." Ryan, known as the group's unofficial president, spends hours each week commenting on fellow riders' workout stats and chatting about everything from leggings to playlists.

In June she helped organize an in-person ride in New York City with a popular instructor, Jennifer Schreiber Sherman. More than 20 people from as far away as Virginia, Ohio, and Wisconsin, showed up. Members gush about Peloton in a way that the uninitiated would consider intimate or obsessive or embarrassing. One apparently addicted woman talks about taking a "spiritual break" from the bike. Another admits to crying during a ride.

"It reminds me a little bit of what we see with CrossFit or some of those programs, just in terms of the community around it and how people really can get kind of fanatical," says Alexis Conason, a psychologist who specializes in body image issues. "It can take on almost a cultlike quality for certain people. It's creating a culture of normalizing behaviors that wouldn't be normalized in other communities."

Members of the Facebook group celebrate "hat tricks," or three rides in one day. Every few weeks, the group will offer members a challenge, such as who can log the most miles in 10 days. Pugerude, who typically rides two or three times a day, won that one, riding almost 675 miles. On the last day she did nine rides.

"I think that's pretty aggressive," Foley says. "Some people are addicted to working out." Investors are drawn to the brand specifically for that online community, he says, and it provides Peloton with insight into its clients' psyches, behaviors, likes, and dislikes. But sometimes, Foley says, "it's a bit of a liability." When instructor Niren, for example, left the company, the Facebook page erupted. "Every once in a while there is negative energy," Foley says. "For the

most part, these groups self-moderate.

If people are beating an issue into the ground, they will be voted off the island. Everyone wants this place to be a positive, supportive, encouraging, optimistic place."

After securing its most recent round of funding, Peloton is set to double both its engineering staff and its retail locations within the next year. It just opened a second cycling studio in Chicago. The company plans to offer classes in other languages from the New York studio in 2017 so customers around the world can log on. And the company will go public someday, Foley says.

Getting up from a conference table, he sketches the next few years of his life: He'll use the money from the IPO to kick-start a campaign to become president of the U.S. This country could use practical politicians, Foley says.

In the meantime, Peloton's obvious challenge is to attract more riders like Ryan. She started working out after the birth of her second child, when she weighed more than 200 pounds. Now she's cut. Starting from her shoulder down to her wrist, each section of Ryan's arm has its own line of definition. On Facebook, she'll occasionally post a sweaty, post-Peloton selfie. Even though she's never met most of her fellow riders, she thinks of many of them as friends. "I got to know the people, and I got to see their profiles," Ryan says. "Maybe because we're all sweating, you feel like she showed up as much as I showed up. It puts us all in the same place. It's a good place. It's a really good place for a lot of people." **B**

WHO BOUGHT THE MOST EXP



PENSIVE ALBUM EVER MADE?

BY DEVIN LEONARD AND
ANNMARIE HORDERN





It was one of the greatest sales pitches the music industry has ever heard. In March 2014, Robert Diggs, better known as RZA, the producer and de facto leader of the iconic rap group Wu-Tang Clan, announced that the Clan would create only one copy of its next album, *Once Upon a Time in Shaolin*, and sell it to the highest bidder. “We’re about to put out a piece of art like nobody else has done in the history of music,” RZA told *Forbes*. “We’re making a single-sale collector’s item. This is like someone having the scepter of an Egyptian king.”

Initially, the Clan wanted to forbid the buyer from publicly releasing the album for 88 years, but over time decided to grant the buyer total freedom as long as the album wasn’t sold commercially. That meant the owner could listen to the record in a soundproof room, drive a pickup truck over it, or release it for free on the Internet. If the owner desired, he could be the only one who ever heard it. In an era when people are happy to stream music rather than actually possess it, *Once Upon a Time in Shaolin* offered a chance to own something truly unique.

The Wu-Tang Clan hired Paddle8, an online auction startup, to sell the album. The 31-track album would come in a hand-carved box, accompanied by a leather-bound book with 174 pages of parchment paper filled with lyrics and background on the songs. The music itself was expected to be spectacular. All the surviving members of the Wu-Tang Clan contributed to *Once Upon a Time in Shaolin*, along with some special guests. Aside from RZA and his co-producer, Tarik “Cilvaringz” Azzougarh, nobody had heard the entire record. It was stored in a vault in the Royal Mansour Marrakech hotel in Morocco, and any duplicates had been destroyed.

Even before the bidding began, the Wu-Tang Clan claimed, it had received a \$5 million offer. Fans speculated that the buyer might turn out to be director Quentin Tarantino, a Hollywood associate of RZA’s, or venture capitalist Ben Horowitz, who’s written about his love of rap. Some Wu-Tang fans objected to the group’s plan. Two of the group’s disgruntled admirers started a Kickstarter campaign to buy *Once Upon a Time in Shaolin* and keep it out of plutocratic hands. “Someone who has disposable millions, it’s just another shiny new toy for them,” says Russell Meyer, one of the organizers. “It’s most likely not going to be someone who appreciates the music.” The drive to keep the music out of the hands of the millionaires was spirited but ultimately too small. Fans pledged just \$15,406.

Then, on Nov. 24, Paddle8 announced that the Wu-Tang Clan had sold the album for a record figure “in the millions.” The price had been agreed to in May, yet according to the press release, the parties “spent months finalizing contracts and devising legal protections for a distinctive work whose value depends on its singularity.” But the group wouldn’t reveal the buyer’s name. RZA said he wanted his privacy. “This was very much a mutual decision,” RZA insisted in an e-mail. There was only one wrinkle: The buyer didn’t care about his privacy; he wanted to go public.

There’s probably only one group of rappers that could pull off such a stunt. The Clan arrived in 1993 with a debut album titled *Enter the Wu-Tang (36 Chambers)*. The group was composed of

nine guys from Staten Island and Brooklyn with enigmatic stage names such as Masta Killa, U-God, Raekwon, Ghostface Killah, GZA, Method Man, Inspectah Deck, and Ol’ Dirty Bastard. They were some of the most inventive wordsmiths that hip-hop audiences had ever encountered, melding street lingo with martial arts allusions and the sayings of the Five Percent Nation, an obscure black movement.

In a rap world that’s become obsessed with fame and money, the Clan holds a special place. Its members never achieved the popularity of Eminem or Jay Z, but they’re venerated by rappers such as Drake and Kanye West for their originality. “They’ve been dope for over 20 years,” says Andrew DuBois, co-editor of *The Anthology of Rap*. “That’s half of hip-hop’s tenure. People all around the world care about the Wu-Tang Clan.”

The architect of Wu-Tang’s early success was RZA, whom the members referred to as the abbot. It was RZA who created the group’s weird aural backdrops using rhythm tracks from old Memphis soul songs interspersed with fragments of jazz master Thelonious Monk’s piano and moans of soul singers that he electronically altered to sound like ghostly exultations. RZA was also a master strategist, persuading all the members to give him full control for five years and allow him to produce every album by the group and any of their solo records. “I said, ‘Give me five years and I will take us to No.1,’” RZA wrote in *The Tao of Wu*, his 2009 memoir-cum-spiritual guidebook. “It was a long conversation, eye-to-eye, man-to-man. I said that no one could question my authority. It had to be a dictatorship.”

RZA turned out to be just as skilled at business. He showed up every evening at 6 p.m. at the offices of Wu-Tang’s label, Loud Records, with a legal pad full of ideas, including which radio stations to target and where to send promotional street teams. Steve Rifkind, the label’s founder and an accomplished rap pitchman himself, says he approved nearly all of them. “He was definitely business-minded,” Rifkind says. “I think you’re born with that.”

The Clan’s first album sold 2.4 million copies in the U.S., according to Nielsen Music. The follow-up, a double album called *Wu-Tang Forever*, sold more than 2 million. In between, Raekwon, Ghostface, Method Man, and GZA released RZA-produced solo albums that are considered just as weighty by fans. The group started Wu Wear, one of the first hip-hop artist-branded clothing lines, and opened a Wu Nails shop on Staten Island run by RZA’s sister.

After five years, RZA relinquished his control over the Wu-Tang Clan, and the group was never the same. Subsequent albums and solo projects weren’t as strong and didn’t sell as well. The Clan flooded the market with music, including albums by artists who weren’t official members but part of a so-called extended Wu-Tang family.

One of those Wu affiliates was Cilvaringz, a Dutch rapper of Moroccan descent who impressed the group in 1997 when he climbed onto the stage at a show in Amsterdam and offered some impromptu verses. Months later he showed up at Wu Nails. Eventually he got a deal to put out a record under the Wu-Tang banner. “Anyone who would go halfway across the world, without a penny, to chase their dream was someone I felt needed to be taken seriously,” RZA says. It was great for Cilvaringz, but fans were overwhelmed. “There was a moment where there was so much Wu product in the world,” says Sasha Frere-Jones, a *Los Angeles Times* critic-at-large and a former *New Yorker* writer who has chronicled the group over the years.

As the group’s hits dwindled, the Clan drifted apart. Ol’ Dirty Bastard, whose real name was Russell Jones, died in 2004 of a drug overdose in a New York recording studio. Method Man

THEY'VE BEEN DORE



The entire Wu-Tang Clan in late 2000. RZA is on the far right

became an actor, appearing in films such as *How High*, and briefly co-starring in a Fox sitcom called *Method & Red*, about two rappers who end up living in a lily-white suburb. RZA also went to Hollywood, providing some music for Tarantino's martial arts-themed *Kill Bill* films, and in 2012 he directed and starred with Russell Crowe in *The Man With the Iron Fists*.

RZA managed to reassemble the Clan's surviving members for the long-awaited album *A Better Tomorrow*, released last December. It drew positive reviews but sold only 60,000 copies in the U.S. The Wu-Tang Clan had tried market saturation. Now it went in the opposite direction with *Once Upon a Time in Shaolin*.

On a chilly evening in March, at the Museum of Modern Art's PS1 exhibition space in Long Island City, several dozen potential buyers and writers turned in their cell phones, tablets, laptops, and anything else with recording capability. Joined by 36 giddy fans who had won tickets on Hot 97, a New York radio station, they were ushered into a dimly lit domed room for an event billed as the first and only time that a portion of *Once Upon a Time in Shaolin* would be heard in public. The ornate box that would hold the album was displayed on a pedestal, watched over by dark-suited security guards.

The crowd listened to a 13-minute excerpt played at an

eardrum-rattling volume and cheered when it was done. *Shaolin* sounded like the best Wu-Tang Clan album in years. Afterward, RZA and Cilvaringz, who first suggested the one-copy concept, discussed the record with Frere-Jones. Clad in a black jacket, black pants, and a black ball cap, RZA, who is tall and slender, compared the Wu-Tang Clan to Mozart and the album to the *Mona Lisa*. Cilvaringz, who is shorter and wore a gray puffy jacket over a hoodie, sounded a similar theme when he talked about a trip the two men took a decade ago to Egypt. "RZA and I would ride horses into the desert completely alone and have the pyramids pretty much to ourselves," Cilvaringz said. "Halfway climbing up the pyramids of Cheops, I said to RZA that one day we would do something special together that would last throughout the ages."

Frere-Jones, who liked what he had heard of the album, wanted to know who the bewitching female singer was on one of the tracks.

"That was Cher," Cilvaringz said.

"Cher?"

"Yeah, Cher. The Cher." (Cher couldn't be reached for comment.)

Frere-Jones also quizzed the producers about how the rest of the Clan felt about not being as involved in the making of



Once Upon a Time in Shaolin as they presumably had been with previous records. “I guess the best way to describe it is with an analogy,” RZA answered. “Everybody got on the boat, but they didn’t know where the boat was going. But look where it landed. You know what I mean? Hey, it’s not on *Gilligan’s Island*.”

“Well, we don’t know which island it’s going to be on yet, right?” Frere-Jones said.

“We don’t know,” RZA said.

According to RZA, *Shaolin* attracted many suitors: “Private collectors, trophy hunters, millionaires, billionaires, unknown folks, publicly known folks, businesses, companies with commercial intent, young, old,” he says. “It varied.” Serious bidders got to hear the 13-minute highlights in private listening sessions arranged by Paddle8 in New York.

One of them was a pharmaceutical company executive named Martin Shkreli. He’s 32 years old but seems much younger, with a tendency to fiddle with his hair and squirm in his seat like an adolescent. The son of Albanian immigrants, Shkreli grew up in what he describes as a tough part of Brooklyn’s Sheepshead Bay neighborhood. He skipped grades in school because he was so bright. Shkreli idolized scientists, but he was also a music fan. Primarily interested in rock as a teenager, he didn’t understand rap, but that changed when he read Shakespeare in high school. “You would get these rhyming couplets and soliloquies and stuff like that, but the couplets would really kind of jar you,” he says. “They would be really these big, soul-crushing moments that Shakespeare intended to stir your spirit. And in many ways, music does that.”

Shkreli was taken by the Wu-Tang song *C.R.E.A.M.*, which stands for “Cash Rules Everything Around Me.” It includes the often-repeated phrase “Dolla dolla bill, y’all!” Shkreli turned out to be good at making dollars himself. He founded two hedge funds that shorted pharmaceutical stocks and then started

his own drug company, Retrophin, earning a reputation on Wall Street as something of a boy genius. In September 2014, however, he says he was “asked to leave” by the company’s board. Retrophin later alleged after an internal investigation that he’d abused his position and misused assets. Shkreli says he didn’t do anything without the company’s approval. Retrophin and its former CEO are now facing off in court. “I was pretty pissed,” Shkreli says. “But I realized that it actually would be better for me, maybe not ego-wise, but financially. I could just sell my stock and build my own next company.”

Now that Shkreli had more money, he started collecting music-related items. He once joked on Twitter about trying to buy Katy Perry’s guitar so he could get a date with her. He got Kurt Cobain’s Visa card in a Paddle8 auction and sometimes produces it to get a rise out of people when it’s time to pay a check.

Shkreli heard about *Once Upon a Time in Shaolin* and thought it would be nice to own, too. He attended a private listening session at the Standard Hotel hosted by Paddle8 co-founder Alexander Gilkes. Shkreli, who describes himself as a bit of a recluse, recalls Gilkes telling him that if he bought the record, he would have the opportunity to rub shoulders with famous actresses and rappers who would want to hear it. “Then I really became convinced that I should be the buyer,” Shkreli says. (Paddle8 declined to comment, citing its policy of client confidentiality.) He also got to have lunch with RZA. “We didn’t have a ton in common,” Shkreli says. “I can’t say I got to know him that well, but I obviously like him.”

Having participated in bidding wars for companies and drugs, Shkreli says he had a feeling from the start that he’d made the highest offer for *Shaolin*. As it turned out, he was right. Shkreli won’t say how much he paid. But someone familiar with the deal says the Wu-Tang Clan sold him the album for \$2 million. Before Shkreli closed on the acquisition, he was permitted to listen to a few more snippets to make sure it was all there. Shkreli delegated the task to an employee. The same month, news broke that Shkreli’s new company, New York-based Turing Pharmaceuticals, had purchased an anti-parasitic drug called Daraprim and raised its price from \$13.50 a pill to \$750. Democratic presidential candidate Hillary Clinton denounced him. “Price gouging like this in the specialty drug market is outrageous,” Clinton tweeted. Her Republican opponent Donald Trump also attacked Shkreli. “He looks like a spoiled brat to me,” Trump said. The BBC wrote that Shkreli “may be the most hated man in America.”

Shkreli seems mildly amused by the controversy. He says it’s his duty as Turing CEO to maximize profits for his investors. “What’s escaped the conversation is, hey, how about the fact that this is actually what I’ve been hired to do,” Shkreli says. “It’s like someone criticizing a basketball player for scoring too many points.” He adds that he’s tried to make Daraprim more easily available to hospitals. Meanwhile, he’s been pranking his critics. In October he donated \$2,700 to Bernie Sanders, Clinton’s rival, which the campaign gave to a Washington health-care facility. Shkreli then applied for

Diminishing Returns

Enter the Wu-Tang (1993) 2.4m copies sold

Wu-Tang Forever (1997) 2.1m

W (2000) 1.1m

Iron Flag (2001) 475,000

Legends of the Wu-Tang (2004) 278,000

8 Diagrams (2007) 203,000

Disciples of the 36 Chambers (2004) 128,000

Better Tomorrow (2014) 60,000
Once Upon a Time in Shaolin (2015) One

DATA: NIELSEN MUSIC

HEAR WHAT YOU'VE GOT



Silvaringz, RZA, and Gilkes hold the book, box, and certification that come with the album

an internship on the Vermont senator's campaign. "I enjoy the back and forth," he says.

Shkreli seems more concerned about how the Wu-Tang Clan would react to the Daraprim dispute. "I was a little worried that they were going to walk out of the deal," he says. "But by then we'd closed. The whole kind of thing since then has been just kind of, 'Well, do we want to announce it's him? Do we *not* want to announce it's him?' I think they were trying to cover their butts a little bit."

After learning that *Bloomberg Businessweek* was about to report that Shkreli had purchased the album, RZA e-mailed a statement: "The sale of *Once Upon a Time in Shaolin* was agreed upon in May, well before Martin Shkreli's [sic] business practices came to light. We decided to give a significant portion of the proceeds to charity."

As for Wu-Tang fans likely to feel queasy when they learn that he's the owner of *Once Upon a Time in Shaolin*, Shkreli just shrugs. "At the end of the day," he says, "they didn't buy the last album or the one before that, and all they had to pay was \$10."

It's a Friday afternoon at Turing's Manhattan headquarters,

and Shkreli and his employees are preparing for a Christmas party that evening. Three executives play a video game. A woman shows Shkreli the cocktail dress she plans to wear. Shkreli had arranged for the rap star Fetty Wap to perform for his employees. "Typically you would say, 'As an average fan, I can't get Fetty Wap to give me a personal concert,'" he says. "The reality is, sure you could. You know, at the right price these guys basically will do anything."

Shkreli wants more artists to make private albums for him. He figures they could use the money, and he will let them do whatever they want. "It's almost like the instructions to the band are, 'Do your best work, however much time it takes, and never compromise anything for me,'" he says. "'I just want to hear what you've got.'"

He hasn't listened to *Once Upon a Time in Shaolin* yet. He's saving that for a time when he's feeling low and needs something to lift his spirits. "I could be convinced to listen to it earlier if Taylor Swift wants to hear it or something like that," Shkreli says. "But for now, I think I'm going to kind of save it for a rainy day." **B**

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FOR INFO AND TICKETS

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GIFTING
COUNTDOWN

FRESH FOOTWEAR

MAKING CDOs
FUNNY

HOT
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Full-Time Traders, Overtime Refs

**Some of finance's finest pull
double duty on the gridiron**
By Mary Pilon

Illustrations by Sara Andreasson

HH

uring the workweek, Hugh Campbell can be found in the Park Avenue offices of the Bank of New York Mellon, where he's a managing director. He focuses on high-net-worth families, with about 300 individual clients and four BNY Mellon offices under his watch. His work wardrobe consists of classic navy suits and crisp white shirts.

On the weekend, however, from September to January, Campbell wears the black-and-white stripes and whistle of a Division I collegiate football referee. He's been doing it for 15 years, first with the Big East, now with the Atlantic Coast Conference. His office in New York is filled with memorabilia including signed footballs and photographs of games refereed past. "My wife said I couldn't keep it at home any longer," he says.

One gray Saturday in late October, Campbell, 57, and seven of his fellow refs prepare at a hotel in Louisville for a meeting of the University of Louisville Cardinals and the Boston College Eagles. They spend the evening before and the morning of the game going over what plays to expect from each team, analyzing calls from the prior weekend, and commiserating about the grim weather. Almost all of them have full-time jobs outside the world of sports. In the stadium, as the teams warm up behind them, their conversation remains practical, designed to get them in sync with each other before they take the field. The job can be thankless and exhausting—and, in Louisville, soggy. Campbell loves it. "You know, like a trading floor—you banter," he says, adjusting his black baseball cap. "That's like what we do. We banter before the game. We're ready for anything."

The similarities might not be obvious at first, but those who do both would tell you that trading and officiating have a lot in common. Both are high-energy and testosterone-charged and reward technical obsession and quick thinking. You'll find finance guys (they're almost all guys) officiating on the sidelines of most Division I sports in the NCAA and just about every professional sport. Not that you'd be able to pick them out as desk-chained office dwellers—these guys are fit. A soccer official might run as many as 7 miles a game, 30 to 40 games a year. And as more of the trader's work becomes automated, the side gig offers a visceral escape from an increasingly screen-heavy day job.

The godfather of Wall Streeter refs is Dick Bavetta. He ran the hardwood for 2,635 consecutive NBA games before hanging up his whistle last year. Bavetta was working at Salomon Brothers in the 1960s and playing basketball with the Wall Street employees' league when he got interested in officiating. He began volunteering to referee games for Catholic high schools in his native Brooklyn, and in the fall of 1966, he attended an eight-week course on officiating for \$25. ("Best return on investment of my life," he says.) By 1990 he'd left business to ref full time. "On Wall Street, you had to learn people skills," Bavetta says. "And as a referee, you need to handle people every night. How you do that is observed by millions of people. It can be an adversarial environment. Refs are solitary figures."

Thick skin is a must. Conflicts with coaches and players are to be expected, to say nothing of the chorus of booing from a disagreeable crowd. Threats and name calling, too. "When you're managing a project, you're herding the cattle," says Fotis Bazakos, a professional soccer referee who's also a corporate consultant for Aon, a multinational risk management conglomerate. "Refereeing is very similar. You have 22 guys out there who are being paid a lot of money and are just as passionate about soccer as you are. It becomes clear if you can do it, if people believe you. Conflict management is a huge part of both jobs."

Although the work is seasonal, referees are paid, and in some cases, they're represented by their own union, just like the players. NFL officials can earn \$25,000 to \$70,000 a season, collegiate referees less than that. MLB umpires can crack six figures—though baseball's longer season typically means forfeiting outside work. Leagues often cover hotel expenses and offer a per diem for food. They're hardly finance perks, but money isn't really the point. For refs who



☒ You know, like a trading floor—you banter. That's like what we do. We banter before the game. We're ready for anything☒

are former athletes, it's a way to stay connected to a sport they love. For those who are fans, it's a way to watch the game from one of the best vantage points in the house. For Campbell: "I wanted the challenge of it."

He started officiating high school and Pop Warner football games in 1981, just for fun. Like an athlete would, he began working his way up through the sport, taking courses and going through certification training. "Clients get a kick out of it," Campbell says, though he occasionally gets "some good-natured critiques on things that happened during the game." Turnover is low, but Campbell has to reapply for his officiating job every year. ACC officials grade his calls for accuracy, and each game becomes part of his performance evaluation. Assignments for bowl games are based on a season's performance, much like a bonus at a firm. Many refs say they have nightmares about blown calls.

As the rain begins to come down in Louisville, Campbell stands stern-faced on the Cardinals' sideline, his eyes never leaving the ball. There are typically eight officials on a football field, each with a specific duty, including a referee, an umpire, a center judge, and a field judge. Campbell is a line judge, looking for things such as offsides, where a defensive player crosses the line of scrimmage before the ball is put into play; the precise point when a player runs out of bounds; and other penalties and rules of play. He gets a few boos over the course of the game, but in each case the anger is short-lived, quickly turning back into drunken, rapturous cheering.

On any given call, an official typically gets jeers from one side and cheers from the other, but in general the elegance of his work is in not being noticed. Refs engage in a quiet ballet on the field, communicating across the yardage with hand signals and whistle blasts, darting out of the way of coaches and players. Despite showers that come and go, the game play in Louisville is relatively clean, making Campbell's job much easier. Louisville's defense is a bit ragged, but they lead 7-0 at the end of the first quarter. "I watch so much football and love the game," Campbell says. "But I couldn't care less who wins." (Louisville did, 17-14.)

Campbell and his fellow referees will spend hours after a game debriefing, either at a nearby hotel or in a designated spot near the stadium, depending on the facility. They'll go over

everything play-by-play, debating what went wrong, what went right, and what they could improve. This routine is required by many leagues, but it's also a good way to blow off steam. The refs don't spend any time lingering on the outcome in public and leave the stadium discreetly. By the time the victorious Louisville players have rushed the field and the fans are trickling into the parking lot, Campbell and his colleagues have been escorted by police back to their hotel. (The police took them to the field that morning, as well.)

The escape is quick by design. "When we leave, we're not always the most popular guys," Campbell says.

From the hotel, he catches a flight back to New York. He needs to get back to the city for Monday's market opening. **B**

Trader Signals

vs.

Referee Signals



Sell



Touchdown, field goal, or extra point



Eight



First down



Stop



TV or radio timeout



January



Horse-collar tackle

Etc.

LAST-MINUTE GIFT GUIDE

The holidays officially end on Jan. 1. Get your shopping done before then with this handy advent calendar. By Nikita Richardson

Perfume is a pretty intimate gift and should not be given lightly

14

Vintage Andean blanket
(\$375; spartan-shop.com)

Hand-woven from sheep's wool in the Andes Mountains, where they know a thing or two about bundling up.



15

Miu Miu First Fragrance
(\$86; neimannmarcus.com)

The brand's first scent is for the feminine and funky.



16

Paul Smith pencil cuff links
(\$125; paulsmith.co.uk)
A little whimsy never hurt anybody.



17

Knox aluminum VR viewer
(\$85; knoxlabs.com)

Handcrafted virtual-reality goggles that strike just the right balance between Luddite and technophile.



18

Tibi x Del Toro slippers
(\$365; tibi.com)

These limited-edition velvet loafers say holidays but don't scream it.



19

Hasami glazed teapot
(\$79; trink-nyc.com)

Hasami porcelain is well-known for its elegant design. Less well-known: It's microwave-safe.



20

Science fiction classics set
(\$250; juniperbooks.com)

Includes selections from Margaret Atwood, Ray Bradbury, Philip K. Dick, Jules Verne, and more of the greats.



21

J.Crew touchscreen gloves
(\$98; jcrew.com)

Rich leather on the outside, soft cashmere on the inside—and you can still use your phone.



22

Want Les Essentiels city shoulder bag
(\$595; wantlessequentials.com)

Make things easy on yourself with a one-size-fits-all gift. A light yet roomy purse for the woman with much to carry.



23

The Ultimate American socks
(\$38; unitedbyblue.com)

The warm bison wool wicks moisture like no other socks.



24

Moroccan neroli shaving duet
(\$80; acesop.com)

Calm skin is the real gift here.



25

Cubebot
(\$15; areaware.com)

This discreet desk toy folds into a cube for more serious moments.



Don't overthink the gift

26

Chloé Snow Capsule Intarsia wool scarf
(\$690; net-a-porter.com)

A cozy scarf is a no-brainer gift, and the Scandinavian-via-1970s pattern is sure to please.



27

Amazon Echo
(\$179.99; amazon.com)

A voice-commanded, Internet-connected electronic assistant that gets smarter the more you use it.



28

My Life on the Road by Gloria Steinem
(\$13.99; amazon.com) or **Gratitude by Oliver Sacks**
(\$9.99; amazon.com)

Download the work of one of these great minds—provided your giftee has a tablet.



29

Chromecast Audio
(\$35—plus \$16 for next-day delivery; store.google.com)

Google's latest streaming device is the missing link between your cell phone and your speaker system.



30

Bespoke Post gift certificate
(\$55 for one box or \$45 per month with subscription; bespokepost.com)

Monthly deliveries on manly themes, including beer, shaving, and leather care.

What you lack in punctuality, you can make up for in regularity

31

Bang & Olufsen BeoPlay H8 wireless headphones
(\$499; beoplay.com)

If you live in New York or San Francisco, tech retailer Enjoy will get them to you within four hours. All that's left is the gift wrap.



Hubert long wing blucher, \$195



PUT A SHOE ON IT

Jack Erwin figured out how to take footwear directly to consumers. By Kyle Stock

Three years ago, Ariel Nelson was working in food and beverage distribution, and Lane Gerson was gutting it out in the finance department at a 3D printing company. The friends were pushing 30 and trying to spruce up their wardrobes for the stream of weddings they were scheduled to attend. That was when they saw it: the gaping hole in the market between the \$100 pair of oxfords at Aldo and the \$350-and-up monk straps at Allen Edmonds. “I would go shoe shopping and know exactly what I wanted in terms of style, color, and price, but I could only ever get two of the three,” Nelson says.

At the time, “cut out the middleman” were magic words for e-commerce startups. The strategy had worked for razor blades, eyeglasses, mattresses, and dress shirts—why should fancy footwear be any different? The friends started Jack Erwin based on what seemed like a simple premise: Design a \$500 pair of men’s dress shoes, make them for \$100, and sell them online for \$200.

Turns out, the shoe business is very, very complicated. Making a high-end dress shoe requires about 100 separate processes, each far more intricate than stitching up a pants leg. Then there’s overhead: To make a pair of shoes you need a last, a foot-shaped mold used to shape the leather. Carved and sanded by hand, a last can take weeks of costly trial and error to perfect, and each model of shoe needs its own. On top of all that, fit is trickier with footwear than with apparel; 30 percent to 40 percent of customers typically return what they buy.

Fortunately, the footwear novices had a veteran to help them through this process. In August 2012, Nelson overheard then-Saks Fifth Avenue brands director Bertrand Guillaume griping in



a Manhattan barber shop about having to source a shoe line for the department store. He said he was tired of dealing with agents and distributors instead of designers and craftsmen, Nelson recalls. Six months later, Guillaume was in Spain overseeing a factory and a handful of

suppliers as Jack Erwin’s new head of product.

To finance their first production order of 2,500 pairs, Nelson and Gerson cobbled together \$275,000 from friends and family. The shoes sold out within two months of their October 2013 debut. Ten weeks later, they had a waiting list of 4,500.

As orders stacked up, Nelson and Gerson dug deeper into their supply chain and found more middlemen to cut: the leather distributors, the shoelace guy, the companies that source the eyelets and thread. Once they started doing it all themselves, quality improved, margins went up, and the company’s return rate is now “well under” 30 percent, Gerson says.

As Jack Erwin’s profile rose in the industry, similar companies began to emerge, each with a different twist on the business model. Beckett Simonon, based in Colombia, is focused on the men’s shoe market in Mexico and Brazil. Awl & Sundry lets customers mix and match materials for a customized shoe. Paul Evans manufactures its shoes in the same Italian factories that make footwear for Gucci and Salvatore Ferragamo. With prices from \$300 to \$400 a pair, Paul Evans is at the more expensive end. Many sell their shoes for about \$200.

With 23 full-time employees, Jack Erwin is the largest of the shoe startups. In September 2014, the company closed a \$9 million round of funding led by Caleres, then called Brown Shoe, the company behind Famous Footwear and Dr. Scholl’s. Jack Erwin then opened a 400-square-foot retail store on a sleepy block in Manhattan’s Tribeca neighborhood. In late November, it added a pop-up shop in Midtown Manhattan, which will be open until March.

Although they won’t share financial details, Nelson and Gerson say sales have tripled both years. “We always said we’d like to do \$100 million a year after five years,” Nelson says. “So far, we’re right on track.” **B**

Baby, It's Warm at the Bar

Six hot cocktails from hot spots
around the country
will get you through the winter
By Sierra Tishgart

Gunfire on Orchard

On the menu at
Wassail, New York
Serves 1

6 oz. mulled apple
cider (recipe below)
½ oz. black tea syrup
(recipe at right)
1½ oz. pear brandy
2 dashes Angostura
bitters
Clove-studded
lemon slice

*Cider (makes
10 servings):
Combine
½ gallon apple
cider (Wassail
uses Soons
Orchards),
1 star anise,
1 tsp. whole
cloves,
2 tsp. whole
allspice, and
½ cinnamon
stick in a saucepan.*

*Cover and heat until
warm, then strain.
Syrup: Mix 1 cup each
hot black tea and
Demerara sugar.
Combine cider, syrup,
brandy, and bitters
in a heated mug
and garnish with
lemon slice.*

The Belafonte

On the menu at
Paydirt,
Portland, Ore.
Serves 1

1 oz. cranberry shrub
(recipe below)
½ oz. honey syrup
(recipe below)
1½ oz. Buffalo Trace
bourbon
½ oz. lemon juice
Laphroaig Scotch
Hot water
Lemon slices

*Shrub: Mix 1 lb.
cranberries with 1 cup
each granulated sugar
and vinegar in a blender
until smooth. Add the
juice of 2 oranges and
2 tbsp. pumpkin pie
spice and let sit for two
days. Syrup: Mix 1 cup
each honey and hot
water and stir until
honey dissolves. Strain
the shrub, then combine
with the next three
ingredients in a
Laphroaig-misted glass.
Top with hot water and
garnish with lemon.*

Tea Punch

On the menu at
Queen Mary, Chicago
Serves 4

2½ oz. honey syrup
(recipe below)
4½ oz. El Dorado
8-year-old rum
4½ oz. Cocchi
Americano
1½ oz. lemon juice
8 oz. hot Earl Grey tea
Angostura bitters
Clove-studded
lemon slices

*Syrup: Mix 1 cup honey
with ½ cup hot water
and stir until honey
dissolves. Combine the
first five ingredients
in a small saucepan and
heat until warm. Serve
in a teacup and finish
with 4 dashes of bitters
and a lemon slice.*

Mulled Cider

On the menu at
Rivertown Lodge,
Hudson, N.Y.
Serves 16

1 vanilla pod
1 cardamom pod
A pinch of
coriander seeds
A handful of fresh
cranberries
1 oz. Crown organic
maple syrup
1 gallon Hudson Valley
Farmhouse
unfiltered cider
1 quart Taconic
Distillery rum or
apple brandy
1 oz. lemon juice
Dried apple slices

Combine the first five ingredients in a saucepan over high heat. Stir until berries begin to pop. Add cider, bring to a boil, then reduce to a simmer for 30 minutes. Strain, then add booze and lemon juice and return to a boil. Serve in a mug with an apple slice.

Café Clement

On the menu at
Yvonne's, Boston
Serves 1

½ oz. Demerara syrup
(recipe below)
1½ oz. Cocchi
Barolo Chinato
½ oz. Santa Maria
al Monte
3 oz. hot black coffee
1 oz. fresh, unsweetened
whipped cream
Nutmeg
Dark chocolate

Syrup: Combine ¼ cup each Demerara sugar and hot water, stirring until sugar dissolves. Add to a heated Irish coffee glass along with the liqueurs and coffee. Top with whipped cream. Garnish with a grating of nutmeg and a few pieces of dark chocolate on the side.

Hot Buttered Rum

On the menu at
Townsend, Austin
Serves 1

4 tsp. spice blend
(recipe at right)
1 scoop butter batter
(recipe at right)
1½ oz. Mount Gay
Black Barrel rum
½ oz. Château
du Tariquet
Bas-Armagnac VS
3 oz. boiling water

Spice blend: Mix 8 tsp. cinnamon, 1 tbsp. ground cloves, and 2 tsp. ground star anise. Butter batter (makes 24 scoops): With a mixer, combine 4 tsp. spice blend with ½ lb. each unsalted butter and brown sugar. Chill until firm, then freeze in tablespoon-size scoops. Drop a butter scoop into a heated mug, then pour in spice blend, rum, Armagnac, and water.



Brad Pitt

+



Steve Carell

+



Ryan Gosling

+



Christian Bale

+



Financial markets



Real estate bubble

Sadness

=

PRETTY GOOD MOVIE

How The Big Short Hollywood-ized the financial collapse. (Hint: It involves a bubble bath.) By Claire Suddath

The *Big Short*—based on Michael Lewis’s account of the 2008 financial crisis and directed by Will Ferrell’s writing partner, Adam McKay—is a ruthless takedown of Wall Street disguised as a snarky Hollywood romp. In the movie, a group of renegade brokers and traders bet against the housing market and make a killing while the rest of the finance world weeps. Fun! The way those renegades did it, however, presents a very big film-making problem: How do you dramatize a series of financial trades so convoluted, so abstruse, that even the people in on the deals didn’t always understand what was going on?

The answer: celebrity cameos and diagrams. Lots of them. To help the audience follow along, McKay periodically stops the action for brief financial tutorials. Sultry actress Margot Robbie defines subprime mortgages while sipping Champagne in a bubble bath. Anthony Bourdain shows up to compare the way banks packaged the bad mortgages into top-rated bonds to how a shifty cook might trick people into eating three-day-old fish by dumping

it in a stew. Selena Gomez visits a Vegas casino with economist Richard Thaler to explain collateralized debt obligations. In one scene, a Deutsche Bank trader loosely based on the real-life Greg Lippman and played by Ryan Gosling explains the housing market’s vulnerabilities using a game of Jenga.

Gosling stars alongside Christian Bale, Steve Carell, Marissa Tomei, and Brad Pitt (whose Plan B produced the movie). All those big names and pretty faces go a long way toward making financial instruments less boring. McKay clearly hopes his cast’s fame will help draw in the type of people who only watch things with superheroes or car chases—a two-hour cinematic lecture on how the economy collapsed may sound a little daunting, but, hey, Ryan Gosling’s in it! More important, the director knows a moviegoer will wrestle with hard truths if she can do it while laughing at their absurdity. There’s a reason Jon Stewart once tied with Tom Brokaw and Anderson Cooper in a Pew Research Center survey of the most trusted news anchors in America.

Unlike Martin Scorsese in 2013’s *The*

Wolf of Wall Street, to which *The Big Short* will undoubtedly be compared, McKay goes light on the flashy wealth and instead populates his Wall Street with a bunch of silly, greedy numbskulls. “How can the banks let this happen? That’s not stupidity, that’s fraud,” says Carell’s character, a Morgan Stanley hedge fund manager based on the real Steve Eisman. “Tell me the difference between stupid and illegal, and I’ll have my wife’s brother arrested,” Gosling retorts. Sure, *The Big Short* has a scene in a strip club, but it’s only because Carell’s character wants to talk to the strippers about how they financed their condos.

The director may have figured a way around the financial jargon, but he can’t do much about the movie’s other problem: It doesn’t have an ending. As Gosling reminds the audience—he literally turns to the camera and speaks to it—all of this really happened. Just a few years ago. And we’re still dealing with the aftermath. The characters’ names may have been changed, but they represent real people, many of whom still have jobs on Wall Street. And sure, the good guys win, but the bad guys—the banks that sold predatory mortgages to people who couldn’t afford them—they win, too. And if they both win, who loses? Take a guess. **B**

**WE’LL WRESTLE
WITH HARD
TRUTHS—IF WE
CAN LAUGH WHILE
WE DO IT**

What's your specialty?

Commercial and residential spaces, but my niche is offices for startup tech companies.

What do you do for them?

I do the overall space planning and aesthetic. Typically these are young companies with fun cultures, so I'll do quirky things like a hidden room or stadium seating.

What does good design bring to an office space?

Interior design is really important for productivity. Having the right-size desk and right lighting can change how a person feels about coming to work.

What's your day?

I'll have days overseeing construction in a hard hat, or with meetings, or at my home office on e-mail.

Those are some edgy shoes.

I like heels because I'm a New Yorker. These are wedges, so I know my feet won't be throbbing by the end of the day.

HOUSE OF MARLEY

MATAANO

ANN TAYLOR

DANI ARPS

31, interior designer,
New York

Do you always wear headphones?

They're my city-girl armor. People get harassed, particularly women on the street. Headphones block out all the sound, so I can focus on my day and not have to hear any nonsense.

NOISY MAY

Where do you get your clothes?

My friends are fashion designers, so I'm, like, "Can I have that?"

What's in your backpack?

I always carry my sketchbook, wallet, tape measure, fabric samples, and color book. The backpack is my mother's line—she designs handbags, backpacks, and accessories.

JACQUELINE ARPS



PETER GELB

General manager, Metropolitan Opera



"My father was second-string drama critic at the *New York Times*—and later managing editor. He took me to Shakespeare in the Park and Broadway and nightclubs."

"On my first day, a fellow usher told me to remove the number on my uniform so people wouldn't be able to complain about me."

"Hurok was an impresario of classical music. Yo-Yo Ma was his 15-year-old cello prodigy, and we've been great friends ever since."



Ma in 1971

Education

Columbia Grammar and Preparatory School, New York, class of 1971
Yale University

"I just didn't feel comfortable, so I dropped out after less than a month. Yale now claims me as an alumni."



On tour with Vladimir Horowitz, 1975

Work Experience

1969-70
Usher, Metropolitan Opera

1971-72
Office boy, Sol Hurok

1972-73
Assistant, press agent, Gurtman & Murtha

1974-77
Vice president, Gurtman & Murtha

1977-81
Director of promotion, assistant manager, Boston Symphony Orchestra

1981-93
President of CAMI Video, Columbia Artists Management

1993-2004
President, Sony Classical

2005-Present
General manager-elect, GM, Metropolitan Opera

"I represented everyone from Carnegie Hall to a Cuban pop performer named La Lupe, who claimed she was driven out of Cuba because Castro thought she might threaten his popularity."

La Lupe



"When Deng Xiaoping signed a treaty with Jimmy Carter, I organized an invitation for the Boston Symphony to seal the new relationship. We didn't have funding, but within days, we had a 747 donated by Pan Am and money from U.S. companies that wanted Chinese business."

With the BSO in China, 1979



"Even though the Met's been around 135 years, I don't think it has a free pass into the future. I've brought in modern directors and a modern production aesthetic, and our live transmission of Saturday matinees is seen by 200,000 people around the world."



Madama Butterfly



Life Lessons

"Our film soundtracks won the Academy Award for best soundtrack four years in a row. *Titanic* netted Sony Music over \$300 million."

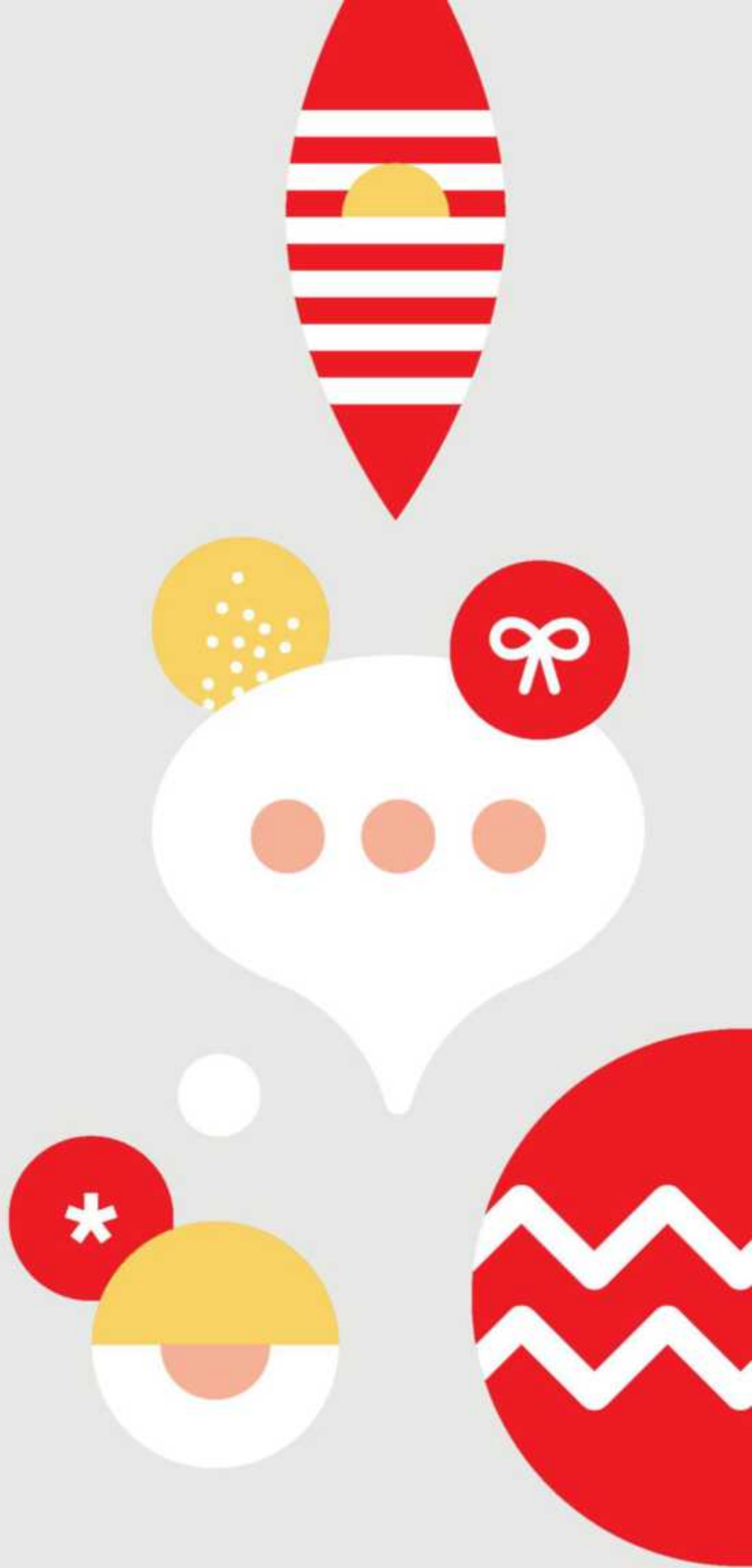
quote, "If the people don't want to come, you can't stop them." 3. "I remember Vladimir Horowitz said, 'If the check is good, the acoustics are good.'"



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more data capacity.
So your business can
easily handle more
customers and more
sales. And that makes
for a very happy holiday.

**Better
matters.**
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Panama City's growth has been fast, but success has made commutes slow. To alleviate congestion, the Government of Panama made building a mass transit system a priority. Citi, with a history in the country dating back to funding the Panama Canal, worked with government leaders to arrange financing for the Panama Metro project. The end result: Better access to jobs and healthcare services, as well as reduced greenhouse gas emissions.

For over 200 years, Citi's job has been to believe in people and help make their ideas a reality.

citi.com/progress

